Final

ENVIRONMENTAL ASSESSMENT FOR MUNITIONS STORAGE AREA AT LANGLEY AIR FORCE BASE, VIRGINIA

United States Air Force
1st Fighter Wing
August 2004

Report Documentation Page

Form Approved
OMB No. 0704-0188

1. REPORT DATE	2. REPORT TYPE	3. DATES COVERED
21 SEP 2004		**00-00-2004 to 00-00-2004**

4. TITLE AND SUBTITLE	5a. CONTRACT NUMBER
Final Environmental Assessment for Munitions Storage Area at Langley Air Force Base, Virginia	5b. GRANT NUMBER
	5c. PROGRAM ELEMENT NUMBER
6. AUTHOR(S)	5d. PROJECT NUMBER
	5e. TASK NUMBER
	5f. WORK UNIT NUMBER
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) **Science Applications International Corporation (SAIC),22 Enterprise Parkway Suite 200,Hampton,VA,23666**	8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)	10. SPONSOR/MONITOR'S ACRONYM(S)
	11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution unlimited

13. SUPPLEMENTARY NOTES

14. ABSTRACT

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT **unclassified**	b. ABSTRACT **unclassified**	c. THIS PAGE **unclassified**	**Same as Report (SAR)**	**103**	

ACRONYMS AND ABBREVIATIONS

1 FW	1st Fighter Wing
ACC	Air Combat Command
ACHP	Advisory Council on Historic Preservation
ACM	Asbestos-Containing Materials
ADP	Area Development Plan
AFB	Air Force Base
AFH	Air Force Handbook
AFI	Air Force Instruction
AFOSH	Air Force Occupational Safety and Health
AGE	Aerospace Ground Equipment
Air Force	United States Air Force
AOC	Area of Concern
AQCR	Air Quality Control Region
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CRMP	Cultural Resource Management Plan
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
dB	decibel
DCR	Department of Conservation and Recreation
DNL	Day-Night Average Sound Level
DoD	Department of Defense
EA	environmental assessment
EIAP	environmental impact analysis process
EO	Executive Order
EPCRA	Emergency Planning and Community Right-to-Know Act
ERP	Environmental Restoration Program
ESA	Endangered Species Act
FONSI	Finding of No Significant Impact
FS	Feasibility Study
FY	Fiscal Year
HRSD	Hampton Roads Sanitation District
IRA	Interim Remedial Action
MSA	Munitions Storage Area
MFH	Military Family Housing
MGD	million gallons per day
MSL	mean sea level
NAAQS	National Ambient Air Quality Standards
NASA	National Aeronautics and Space Administration
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
OSHA	Occupational Safety and Health Administration
P.L.	Public Law
PA/SI	Preliminary Assessment/Site Inspection
PCB	polychlorinated biphenyl
PCT	polychlorinated triphenyl
PGM	Precision Guided Munitions
PM_{10}	particulate matter equal to or less than 10 micrometers in diameter
$PM_{2.5}$	particulate matter equal to or less than 2.5 micrometers in diameter
PP	Proposed Plan
Q-D	Quantity-Distance
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
ROD	Record of Decision
ROI	region of influence
RUL	Remaining Useful Life
SAFO	Secretary of the Air Force Order
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SR	State Route
U.S.	United States
UFC	Unified Facilities Criteria
USACE	United States Army Corps of Engineers
USC	United States Code
USDCESA	United States Department of Commerce, Economics, and Statistics Administration
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
UPH	Unaccompanied Personnel Housing
UST	underground storage tank
VDEQ	Virginia Department of Environmental Quality
VDHR	Virginia Department of Historic Resources
VOC	volatile organic compound
VPDES	Virginia Pollutant Discharge Elimination System
WTP	Water Treatment Plant

FINAL

FINDING OF NO SIGNIFICANT IMPACT/ FINDING OF NO PRACTICABLE ALTERNATIVE

NAME OF THE PROPOSED ACTION

Construction, demolition, and renovation at the Munitions Storage Area at Langley Air Force Base (AFB), Virginia.

DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

Langley AFB proposes construction, demolition, and renovation of various facilities at the existing Munitions Storage Area (MSA) at Langley AFB. This action would include construction of 13 new facilities, renovation of 4 existing facilities, and demolition of 16 existing facilities. This Environmental Assessment (EA) analyzes the impacts associated with the proposed action and the no-action alternative.

SUMMARY OF ENVIRONMENTAL CONSEQUENCES

Proposed Action: This EA provides an analysis of the potential environmental consequences associated with the proposed action and the no-action alternative. Nine resource categories received thorough evaluation to identify potential environmental consequences. As indicated in Chapter 4.0, none of the alternatives would result in significant impacts to any resource area.

Land Use, Transportation, and Visual Resources: Development within the MSA at Langley AFB would be consistent with base plans and with the goals of the Coastal Zone Management Act to the maximum extent practicable. Standard construction and demolition practices would be included to reduce the potential for soil erosion into the Chesapeake Bay watershed. With the construction and demolition of these facilities in accordance with base architectural and landscaping standards, the visual character of the base would be improved. No significant conflicts with existing on-base land uses would result from the proposed construction or demolition. Under the proposed action, no on-base roads would be closed during construction and/or demolition. Construction- related truck traffic may lead to degradation of base road surfaces and occasional congestion at the base's gates. These adverse effects would be short-term and not significant. Construction of the MSA Administrative Support Building would be on lands previously disturbed and currently designated as open space.

Cultural Resources: Development activities are not expected to impact cultural resources at the proposed action location. This area has been inventoried for archaeological resources and no significant resources have been identified. If resources are inadvertently discovered, construction activities would be halted and the State Historic Preservation Office (SHPO) would be notified and procedures outlined in the National Historic Preservation Act would be followed. Consultation with the SHPO has been initiated.

Biological Resources: Development activities would have no significant effects to individual species or native plants or animals at either location because the only plant or animal species likely to be displaced from this marginal habitat are individuals of common and locally

abundant species. No jurisdictional wetlands would be affected by the proposed action. No threatened, endangered, or special species/communities would be significantly affected by the proposed action. The area to be disturbed is of low ecological value and bald eagles do not use Langley AFB for nesting or other critical life cycle functions. Incidentally occurring listed, proposed, or candidate species are not likely to be significantly affected because no critical habitat exists on Langley AFB.

Water Resources: Development activities at the proposed action site would not be expected to significantly affect the water quality of the Back River and Chesapeake Bay. While the majority of Langley AFB, including the proposed action site, is located within the 100-year floodplain, there is no practicable alternative that would not involve construction and demolition in the floodplain. No significant environmental consequences are anticipated from the construction and demolition with the proposed action.

Hazardous Materials and Waste Management: Development of the MSA would have the potential to disturb portions of various Environmental Restoration Program (ERP) sites. The Langley AFB ERP Manager would coordinate a waiver from Air Combat Command (ACC) policy concerning the construction disturbances to this ERP site. Waivers would identify the appropriate control measures that would be necessary for the activities at ERP sites and no long-term significant environmental consequences are anticipated. Demolition activities would generate approximately 21,800 cubic yards of construction debris. If not recycled, these materials would be disposed of at landfills that have adequate capacity without having a significant effect on the overall capacity. No appreciable hazardous waste generation is expected with the operation of the MSA.

Safety: Development of the MSA under the proposed action would increase safety risks during the construction and demolition phases; however, these risks would be reduced with implementation of standard construction and demolition safety practices. No significant environmental consequences are anticipated.

Noise: Development activities associated with the MSA at the proposed action site would generate temporary localized noise during the construction and demolition phases. These localized noise increases may disrupt base personnel in nearby structures but the noise disruptions would be temporary and would be limited to daytime hours; therefore, impacts are considered insignificant.

Air Quality: Development-related air emissions would be generated both on base and within the region due to the hauling of fill material to the base and other earth-moving activities. These emissions would be less than 1 percent of emissions in the Hampton Air Quality Control Region. Langley AFB is located in a maintenance area for ozone; however, the proposed action would not contribute ozone-related emissions above United States Environmental Protection Agency established *de minimis* levels for ozone. Therefore, a formal air quality conformity determination is not required.

Socioeconomics and Environmental Justice: Employment and earnings associated with the proposed action are not expected to have any significant environmental consequences.

Construction and demolition associated with the proposed action would not create any disproportionately high and significant health and environmental effects on low-income and minority populations on base or in the vicinity of Langley AFB.

No-Action Alternative: Under the no-action alternative, development of the MSA to fully support the F/A-22 mission in the vicinity of Worley Road would not take place. Munitions Storage would continue in facilities that are 40 to 60 years old. The facilities are not adequate or safe for the storage of munitions to support the F/A-22 mission.

CONCLUSION

Based on the findings of the EA, no significant impact is anticipated from implementation of either the proposed action or the no-action alternative. Therefore, issuance of a Finding of No Significant Impact (FONSI) is warranted, and an environmental impact statement is not required. Pursuant to Executive Order (EO) 11988, the authority delegated in Secretary of the Air Force Order (SAFO) 791.1, and taking the above information into account, I find that there is no practicable alternative to this action and that the proposed action includes all practicable measures to minimize harm to the environment.

Bruce A Wright

SEP 21 2004

BRUCE A. WRIGHT
Lieutenant General, USAF
Vice Commander

DATE

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United States Air Force
1st Fighter Wing

August 2004

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This Environmental Assessment (EA) describes the potential environmental consequences resulting from a proposal for construction, demolition, and renovation, hereinafter referred to as "development" at the existing Munitions Support Area (MSA) at Langley Air Force Base (AFB), Virginia.

ENVIRONMENTAL IMPACT ANALYSIS PROCESS

This EA has been prepared by the United States Air Force (Air Force), Air Combat Command (ACC) and the 1st Fighter Wing (FW) in accordance with the requirements of the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality (CEQ) regulations implementing NEPA, and 32 Code of Federal Regulations [CFR] 989, et seq., *The Environmental Impact Analysis Process (EIAP)* (formerly known as Air Force Instruction (AFI) 32-7061).

PURPOSE AND NEED FOR ACTION

The purpose of this action is to support the F/A-22 mission with the proposed construction, renovation, and demolition of the existing MSA at Langley AFB, Virginia.

PROPOSED ACTION AND ALTERNATIVES

Langley AFB proposes development of the MSA, which would include construction of 13 new buildings, renovation of four existing buildings, and demolition of 16 existing buildings . The existing MSA is located in the northwest portion of Langley AFB adjacent to the National Aeronautics and Space Administration's Langley Research Center. This EA analyzes the potential impacts from the development associated with the proposed action and the no-action alternative.

SUMMARY OF ENVIRONMENTAL CONSEQUENCES

This EA provides an analysis of the potential environmental consequences during the development associated with the proposed action. Nine resource categories received a thorough evaluation to identify potential environmental consequences. As indicated in Chapter 4.0, construction, renovation, and demolition would not result in significant impacts to any resource area.

Land Use. Development within the MSA at Langley AFB, Virginia would be consistent with the base General Plan, the MSA Area Development Plan and to the maximum extent practicable with the goals of the Virginia Coastal Zone Management Program. Construction of the MSA Administrative Support Building would be on lands previously disturbed and currently designated as open space. No conflicts with existing on-base land uses would result from the construction. On-base road surfaces may experience some degradation and congestion at the base's gates. This may increase as a result of construction-related truck traffic. However, no significant impacts to transportation resources are anticipated. With the construction and

demolition of these facilities in accordance with base architectural and landscaping standards, the visual character of the base would be improved.

Cultural Resources. Development activities are not expected to impact cultural resources at the proposed action location. Development areas have been inventoried for archaeological resources and no significant resources have been identified. If resources are inadvertently discovered, construction activities would be halted and the State Historic Preservation Office (SHPO) would be notified and procedures outlined in the National Historic Preservation Act would be followed. Consultation with the State Historic Preservation Office (SHPO) has been initiated.

Biological Resources. Development activities would have no significant effects to individual species or native plants or animals since the only plant or animal species likely to be displaced from this marginal habitat are individuals of common and locally abundant species. Development activities do not have the potential to affect jurisdictional wetlands. No threatened, endangered, or special species/communities would be significantly affected by the proposed action. Bald eagles do not use Langley AFB for nesting or other critical life cycle functions. Incidentally occurring listed, proposed, or candidate species are not likely to be significantly affected because no critical habitat exists on Langley AFB. The area to be disturbed is of low ecological value.

Water Resources. Development activities associated with the MSA would not be expected to significantly affect the water quality of the Back River and Chesapeake Bay. Because the majority of Langley AFB is located within the 100-year floodplain there is no practicable alternative that would not involve construction in the floodplain. No significant environmental consequences are anticipated and the project would be in conformance with the goals of the Virginia Coastal Zone Management Program.

Hazardous Materials and Waste Management. Development associated with the MSA would have the potential to disturb portions of various Environmental Restoration Program (ERP) sites (LF-11, LF-13, LF-18, SS-24, and OT-64). The Langley AFB ERP Manager would coordinate a waiver from ACC policy concerning development disturbances on ERP sites. Waivers would identify the appropriate control measures that would be necessary for the activities at the ERP sites and no long-term significant environmental consequences are anticipated. Existing management practices would continue to be used to comply with Virginia regulations. Demolition activities would generate approximately 21,800 cubic yards of construction debris. If not recycled, these materials would be disposed of at landfills that have adequate capacity without having a significant effect on the overall capacity. No significant impacts are anticipated to these resources.

Safety. Implementation of the Proposed Action would increase safety risks during demolition and construction phases but these risks would be reduced by employing standard construction safety practices, including Occupational Safety and Health Administration (OSHA) and National Fire Protection Agency regulations.

Noise. Development associated with the MSA would generate temporary localized noise during construction and demolition phases. These localized noise increases may disrupt base personnel in nearby structures but noise disruptions would be temporary and would be limited to daytime hours. Consequently, impacts are considered insignificant.

Air Quality. Development-related air emissions would be generated both on base and within the region with the hauling of fill material to the base, site clearing, demolition and other earth-moving activities both on base and within the region. These emissions would be less than one percent of emissions in the Hampton Air Quality Control Region (AQCR). Langley AFB is located in a maintenance area for ozone; however, the proposed action would not contribute ozone-related emissions above United States Environmental Protection Agency (USEPA) established *de minimis* levels for ozone. Therefore, a formal air quality conformity determination is not required and the project would be in conformance with the goals of the Virginia Coastal Zone Management Program.

Socioeconomics and Environmental Justice. No significant socioeconomic consequences would be expected with construction activity, employment, and earnings associated with the proposed action. Development of the MSA would not create any disproportionately high and significant health and environmental effects on low-income and minority populations on base or in the vicinity of Langley AFB.

No-Action Alternative. If this alternative was chosen, the construction, renovations, and demolitions would not occur. Current facilities which are 40 to 60 years old are not sufficient and able to safely support the F/A-22 mission at Langley AFB.

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1.0 PURPOSE AND NEED FOR ACTION

1.1 INTRODUCTION

The United States Air Force (Air Force), 1st Fighter Wing (1 FW) proposes construction, demolition, and renovation, hereinafter referred to as "development" of the existing Munitions Storage Area (MSA) at Langley Air Force Base (AFB). The proposed improvements consist of demolition of 16 existing facilities, renovation of 4 existing facilities, and construction of 13 new facilities. This Environmental Assessment (EA) has been prepared to analyze the potential environmental consequences associated with the proposed action and no-action alternative in accordance with the requirements of the National Environmental Policy Act (NEPA) (42 United States Code [USC] 4321 *et seq.*). This document was prepared in accordance with the following:

- Regulations established by the Council on Environmental Quality (CEQ) (40 Code of Federal Regulations [CFR] 1500-1508).
- Requirements of the NEPA of 1969, (42 United States Code [USC] 4321-4347), Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] §§ 1500-1508), and 32 CFR Part 989, et seq., *Environmental Impact Analysis Process (formerly known as Air Force Instruction [AFI] 32-7061)*.

Section 1.2 provides background information that briefly describes Langley AFB. The purpose and need for the proposed action and the no-action alternative are described in Section 1.3.

A detailed description of the proposed action and no-action alternative is provided in Chapter 2.0. Chapter 3.0 describes the existing conditions of various environmental resources that could be affected if the proposal were implemented. Chapter 4.0 describes how those resources would be affected by implementation of the proposed action or the no-action alternative. Chapter 5.0 addresses the cumulative effects of the proposed action or the no-action alternative, as well as other recent past, current, and future actions that may be implemented in the region of influence (ROI) for the proposed action or the no-action alternative.

1.2 BACKGROUND

Langley AFB is located approximately 175 miles south of Washington, D.C., near the south end of the lower Virginia Peninsula on the Back River, a tributary of Chesapeake Bay. Langley AFB is located in Hampton, Virginia, in a large metropolitan area made up of independent cities and counties in the southeast corner of Virginia. The entire area, which is known as Hampton Roads, is divided by the James River into two geographic regions. The northern portion is called the Virginia Peninsula and the southern portion is called South Hampton Roads. Other cities in the area include Newport News, Poquoson, Norfolk, and Portsmouth. As shown in Figure 1-1, the main base occupies 2,883 acres between the Northwest and Southwest Branches of the Back River.

Langley AFB is headquarters for Air Combat Command (ACC) and home of the 1 FW. ACC is one of eight major commands in the Air Force and is responsible for organizing, equipping,

training, and maintaining combat-ready forces at the highest level of readiness. The primary mission of Langley AFB is to provide air operational support to a broad spectrum of aircraft in both peacetime and combat environments. General goals of the base are to sustain the resources and relationships deemed appropriate to pursue national interests, and provide for the command, control, and communications necessary to execute the missions of the Air Force, ACC, and the 1 FW.

1.3 PURPOSE AND NEED

The purpose of this action is to develop new facilities at the existing MSA at Langley AFB. This action would include demolition of 16 existing facilities, renovation of four existing buildings, and construction of 13 new facilities required to support the F/A-22 air-to-ground capability at Langley AFB. This effort would start in the fourth quarter of Fiscal Year (FY) 2004 and continue through FY 2008.

With the development of the Global Strike Task Force warfighting concept, the role of the F/A-22 has been redefined from that of an air superiority aircraft to a multi-role fighter/tactical strike aircraft. This change has established the need to train personnel, maintain equipment, and operate the F/A-22 aircraft with air-to-ground munitions. Langley AFB has traditionally been the home to the 1 FW, which has maintained an air superiority mission with its F-15C aircraft. Langley's F-15C aircraft can be armed with combinations of four different air-to-air weapons: AIM-7F/M Sparrow missiles or AIM-120 Advanced Medium Range Air-to-Air Missiles on its lower fuselage corners, AIM-9L/M Sidewinder or AIM-120 missiles on two pylons under the wings, and an internal 20mm Gatling gun (with 940 rounds of ammunition) in the right wing root. The F/A-22 aircraft would be armed with similar air-to-air weapons, but also have the capability to carry air-to-ground munitions. These air-to-ground munitions have a greater net explosive weight (10 to 20 times greater than air-to-air weapons) and require enhanced munitions storage facilities to maintain the size of existing explosive safety zones and new maintenance facilities.

The base's facilities have little or no capacity to store air-to-ground munitions and many of its existing munitions storage facilities are 40 to 60 years old and cannot adequately and safely accommodate the additional munitions associated with the air-to-ground role of the F/A-22. Base munitions personnel require additional facilities to maintain both air-to-air and air-to-ground weapons and have the appropriate training to support the air-to-ground mission.

Figure 1-1 Map of Langley AFB, Virginia

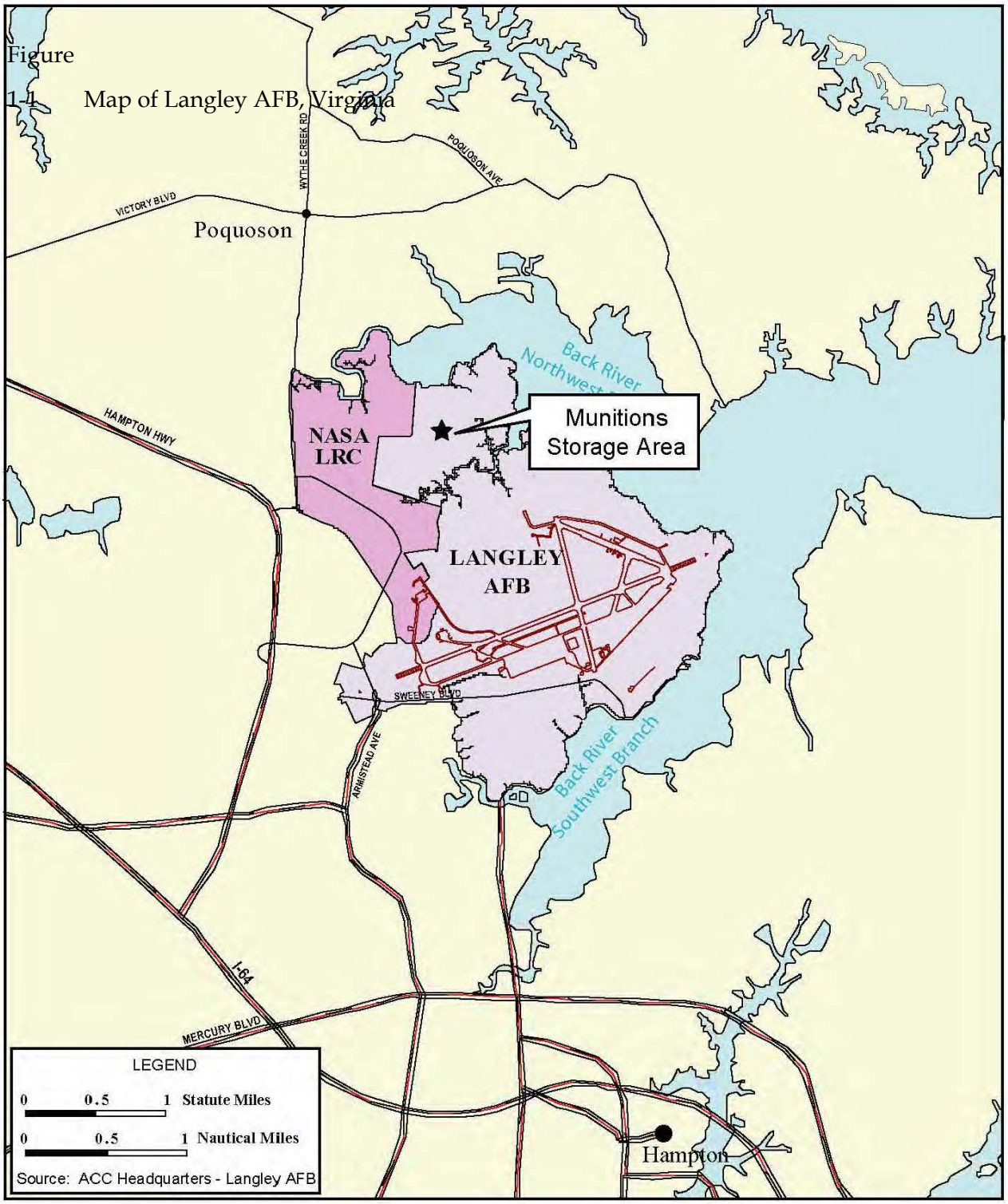

Figure 1-1

Map of Langley AFB, Virginia

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2.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

This section describes the proposed action for development of the existing MSA as shown in Figure 2-1. This section also describes the no-action alternative, implementation of which would not fully support the F/A-22 multi-role mission.

2.1 PROPOSED ACTION AND ALTERNATIVES

2.1.1 Proposed Action

Implementation of the Proposed Action would include demolition of 16 structures with a total square footage of approximately 39,896, the locations of which are identified on Figure 2-2. Construction would include 13 facilities with a total square footage of 82,820 a twofold increase over the amount of area to be demolished. These new facilities would support the additional 118 personnel necessary to conduct the F/A-22 mission and the need to provide upgraded munitions storage facilities. It would also include the construction of 191 parking spaces and approximately 1,300 feet of 25 foot-wide driveways and internal roads. The Proposed Action would also include the renovation of four facilities with a total square footage of 24,423. The specific facilities included in the Proposed Action are identified in Table 2-1 along with the start date for the development.

DEMOLITION

Prior to demolition of the 16 facilities, Langley AFB would contract to have asbestos-containing materials (ACMs) and lead-based paint removed and properly disposed of in accordance with federal and state regulations. Building 1077 is known to have ACMs, lead-based paint, and lead dust from industrial processes. Site preparation would include establishing a buffer zone around the involved facilities. The proposed demolition would involve complete dismantling and removal of all facility structures, equipment and machinery, in accordance with applicable regulatory requirements to ensure proper handling and disposition of the waste. With the demolition of Building 1053, the existing paint booth would be relocated to the new Precision Guided Munitions (PGM) shop. With the demolition of Building 1067, the existing oil/water separator would be excavated and a closure report be provided by the demolition contractors to the base for submission to Virginia Department of Environmental Quality (VDEQ). All utilities would be capped or disconnected. Materials from all facilities proposed for demolition would be recycled to the greatest extent practicable.

The demolition contractor would dispose of the remaining materials in an approved landfill in accordance with state and local regulations and utilizing an established haul route for equipment delivery and debris removal. The demolition would involve minimal ground disturbance and any landscaped areas that may be disturbed by the demolition would be restored to prevent any long-term soil erosion. Frequent spraying of water on exposed soil during ground disturbance and demolition activities, proper soil stockpiling methods, and prompt replacement of ground cover or pavement are standard construction procedures that could be used to minimize the amount of dust generated during demolition.

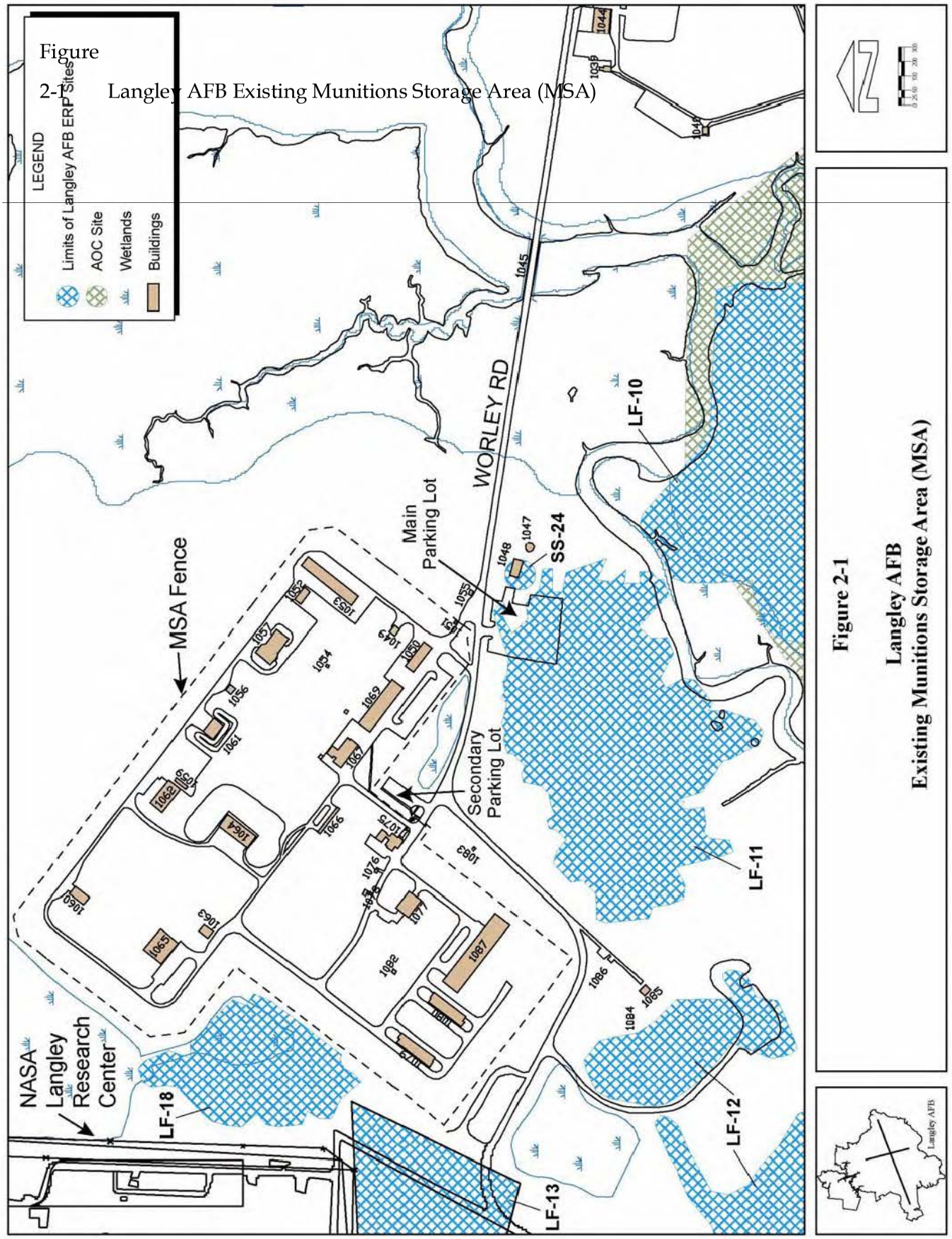


Figure 2-1 Langley AFB Existing Munitions Storage Area (MSA)

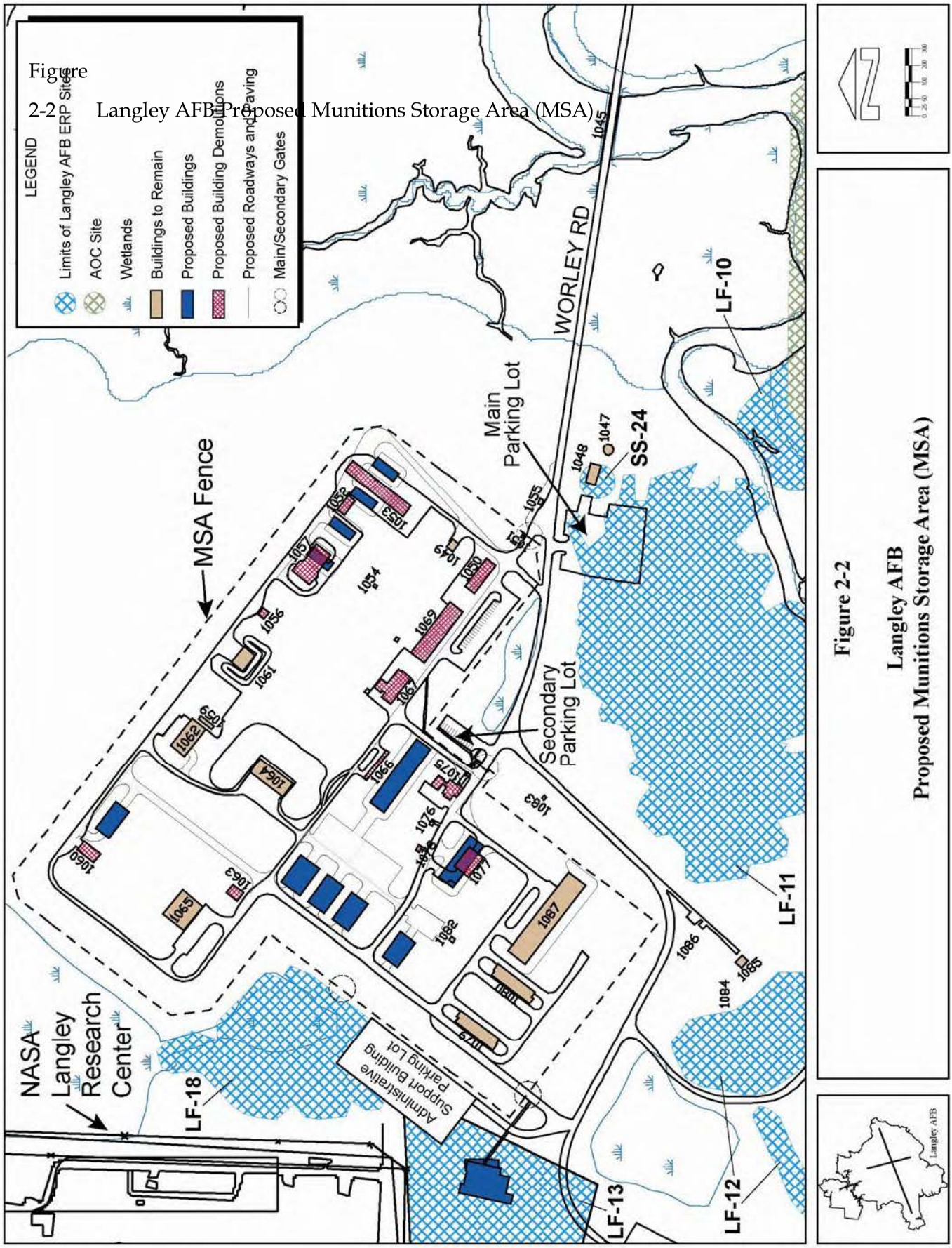


Figure
2-2 Langley AFB Proposed Munitions Storage Area (MSA)

Table 2-1. MSA Development Phasing

Fiscal Year 04		
Construction	*Demolition*	*Renovation*
Above Ground Magazine (6,000 sq. ft.)	Facility #1052 (1,350 sq. ft.)	Facility #1077 (3,847 sq. ft.)
Munitions Assembly Conveyor (MAC) Pad (4,000 sq. ft.)	Facility #1056 (675 sq. ft.)	Facility #1062 (5,113 sq. ft.)
Storage Igloo #1 (2,080 sq. ft.)	Facility #1060 (1,560 sq. ft.)	Facility #1064 (6,113 sq. ft.)
Aerospace Ground Equipment (AGE) Storage Facility and Equipment Storage Pad (7,000 sq. ft.)		Facility #1087 (9,350 sq. ft.) and install security system
Fiscal Year 05		
Construction	*Demolition*	*Renovation*
Inert Spares Storage Facility (6,000 sq. ft.)	Facility #1057 (1,980 sq. ft.)	None
AGE/Trailer Maintenance Facility (5,500 sq. ft.)		
Storage Igloo #2 (2,080 sq. ft.)		
Mobility Storage Facility (6,000 sq. ft.)		
Fiscal Year 06		
Construction	*Demolition*	*Renovation*
Administrative Support Facility (25,000 sq. ft.)	None	Upgrade MSA Infrastructure
Parking Lot for Administrative Support Facility (191 parking spaces)		
Northwest Gate		
Precision Guided Munitions (PGM) Maintenance Facility (6,000 sq. ft.)		Extend MSA Road to meet Northwest Gate
Storage Igloo #3 (2,080 sq. ft.)		
Storage Igloo #4 (2,080 sq. ft.)		
Fiscal Year 07		
Construction	*Demolition*	*Renovation*
Conventional Munitions Maintenance/Inspection Facility (9,000 sq. ft.)		
New Road (running southwest from northeast perimeter road)	Facility #1053 (8,398 sq. ft.)	Install signage for one-way vehicle flow pattern
Fiscal Year 08		
Construction	*Demolition*	*Renovation*
None	Facility #1050 (4,142 sq. ft.) Facility #1059 (600 sq. ft.) Facility #1063 (1,040 sq. ft.) Facility #1066 (1,148 sq. ft.) Facility #1067 (3,201 sq. ft.) Facility #1069 (9,408 sq. ft.) Facility #1075 (2,387 sq. ft.) Facility #1076 (80 sq. ft.) Facility #1077 (3,847 sq. ft.) Facility #1078 (80 sq. ft.) Facility #1082 (80 sq. ft.)	None

RENOVATION AND CONSTRUCTION

With the start of building construction, each building site would be graded and sediment and erosion controls would be installed. These standard construction practices would include the installation of a silt fence, storm drain inlet protection, temporary sediment traps, and diversion dikes within project limits prior to commencement of any on-site work. The proposed action would include renovation of four facilities and construction of 13 facilities identified in Table 2-1. All development activities would be performed in accordance with current security and force protection requirements.

Renovation is needed at four facilities to alleviate issues with lead-based paint, asbestos, and ensure safe working conditions for MSA personnel currently working in these facilities.

The proposed action would also include realignment of the MSA perimeter road (east corner and near current administrative area); construction of a new internal road (running southwest from northeast perimeter road); installation of signage for one-way vehicle flow pattern in accordance with AFI 21-101, paragraph 20.4 through 20.4.2.3; construction of a Northwest Gate that would extend the MSA road to meet the new gate to improve vehicle circulation in the area; construction of 38,200 square feet of parking areas containing 191 spaces; and upgrading the MSA infrastructure (water distribution; wastewater collection; electrical systems; lighting; communications; and storm drainage). For emergency backup electrical power a new 350-kilowatt diesel generator with an aboveground storage tank would be installed within the fenceline of the MSA.

All new construction would have a first-floor elevation of at least 9 feet above mean sea level (MSL) to reduce the potential affect of 100-year storms, and to avoid flooding impacts to the munitions mission. It is estimated that approximately 11,380 cubic yards of fill would be needed. Construction support for activities associated with MSA development would occur in a construction staging area intended for future use as parking for the new Administrative Support facility. This parking would not be required until that facility is built and associated parking is needed.

OPERATIONS

Operations to support the F/A-22 mission would be very similar to current F-15C activities. Munitions personnel would conduct their activities within the confines of the existing MSA and at the adjacent new Administrative Support Building. Movement of ordnance to the flightline would continue to use the existing designated routes.

2.1.2 Manpower Requirements

Langley AFB currently supports approximately 128 full-time military and civilian personnel at the current MSA facility as shown in Table 2-2. The proposed MSA development would involve a change in manpower requirements resulting in an overall increase of approximately 118 personnel at Langley AFB.

Table 2-2. Current and Proposed Action Manpower Levels

	Officers	*Enlisted*	*Civilian Employees*
Langley AFB Current Manpower[1]	2,125	7,264	2,036
MSA Current Manpower[2]	2	126	0
Proposed Action[2]	0	118	0
Total MSA Manpower	2	244	0
Source: [1] Personal communication Johnston, 2004; [2] Personal communication Munro, 2004			

2.1.3 No-Action Alternative

Under the no-action alternative, the above development would not occur. Current facilities which are 40 to 60 years old are not sufficient and able to safely support the F/A-22 air-to-ground mission at Langley AFB.

2.2 ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD

Due to the uniqueness of munitions storage, the explosive safety buffer zones already in place, and the difficulty of placing these structures in another area of the base, no other alternative locations were considered reasonable.

2.3 ENVIRONMENTAL IMPACT ANALYSIS PROCESS

The EIAP includes the review of all information pertinent to the proposed action and no-action alternative and provides a full and fair discussion of potential consequences to the natural and human environment. The process includes involvement with the public and various government and private agencies to identify possible consequences of an action, as well as the focusing of analysis on environmental resources potentially affected by the proposed action and the no-action alternative.

2.3.1 Public and Agency Involvement

Through the scoping process, the Air Force obtained information regarding pertinent environmental issues the agencies felt should be addressed in the environmental impact analysis. Agency consultations were undertaken with regard to cultural resources and biological resources, primarily for compliance with the Endangered Species Act (ESA).

The Air Force has prepared and published an advertisement in the local newspaper, *The Daily Press,* announcing the availability of the Draft EA for public and agency review. Copies of the Draft EA have been provided to the VDEQ Single Point of Contact to allow for review by appropriate state and local agencies.

2.3.2 Regulatory Compliance

This EA has been prepared to satisfy the requirements of NEPA (Public Law [P.L.] 91-190, 42 USC 4321 *et seq.*) as amended in 1975 by P.L. 94-52 and P.L. 94-83. The intent of NEPA is to protect, restore, and enhance the environment through well-informed federal decisions. In addition, this document was prepared in accordance with 32 CFR Part 989, et seq., *Environmental Impact Analysis Process (formerly known as Air Force Instruction [AFI] 32-7061)*, which implements Section 102 (2) of NEPA and regulations established by the CEQ (40 CFR 1500-1508; 32 CFR Part 989).

Implementation of the proposed action or the no-action alternative would require concurrence from several regulatory agencies. Compliance with the ESA involves communication with the Department of the Interior (delegated to the U.S. Fish and Wildlife Service [USFWS]) in cases where a federal action could affect the listed threatened or endangered species, species proposed for listing, or species that could be candidates for listing. A letter was sent to the appropriate USFWS agencies, as well as their state counterparts, informing them of the proposed action and requesting data regarding applicable protected species. Copies of the Draft EA would be provided to the VDEQ Single Point of Contact to allow for review by appropriate state and local agencies. The preservation of cultural resources falls under the purview of State Historic Preservation Office (SHPO), as mandated by the National Historic Preservation Act (NHPA) and its implementing regulations. VDEQ would provide SHPO with a copy of the Draft EA for review and coordination.

Appendix A includes copies of relevant correspondence regarding protected species provided by interested agencies.

2.3.3 Permit Requirements

This EA has been prepared in compliance with NEPA; other federal statutes, such as the Clean Air Act (CAA) and the Clean Water Act (CWA); EOs, and applicable state statutes and regulations. Table 2-3 summarizes applicable federal, state, and local regulatory review and the potential for change to permits due to the proposed action and no-action alternative. In addition to this EA being prepared for the decision maker and the interested public, it is also a tool for Air Force personnel to ensure compliance with all regulatory requirements from proposal through project implementation.

2.4 COMPARISON OF ALTERNATIVES

Table 2-4 summarizes the potential environmental impacts of the proposed action and alternatives, based on the impact analyses presented in Chapter 4.0. In no resource category would the environmental consequences be significant with the implementation of the proposed action.

Table 2-3. Environmental Related Regulatory Requirements

Type of Permit or Regulatory Requirement	*Requirement*	*Agency*
Endangered Species Act (ESA)	Required to consult on impacts of project implementation on federally listed or proposed threatened and endangered species	U.S. Fish and Wildlife Service (USFWS); Virginia Department Game and Inland Fisheries
Clean Water Act (CWA)	Virginia Pollutant Discharge Elimination System storm water permit	Commonwealth of Virginia, VDEQ
Clean Air Act (CAA)	Potential modification to VDEQ Synthetic Minor Permit	Commonwealth of Virginia, VDEQ
National Historic Preservation Act (NHPA) Section 106	Consultation with State Historic Preservation Office (SHPO) and Notification to Advisory Council on Historic Preservation (ACHP)	Commonwealth of Virginia Department of Historic Resources (VDHR); ACHP
Coastal Consistency Determination	Determine consistency with the Commonwealth's Coastal Zone Management Program	Commonwealth of Virginia, VDEQ

Table 2-4. Summary of Potential Environmental Impacts of the Proposed Action and the No-Action Alternative

Resource	*Proposed Action*	*No-Action Alternative*
Land Use	-	0
Transportation	-	0
Visual Resources	+	0
Cultural Resources	-	0
Biological Resources	0	0
Water Resources	-	0
Hazardous Materials and Waste Management	-	0
Safety	-	-
Noise	-	0
Air Quality	-	0
Socioeconomics and Environmental Justice	+	0

- = Adverse, but no significant impact
+ = Positive/beneficial impact
0 = No change

3.0 AFFECTED ENVIRONMENT

This chapter describes relevant existing environmental conditions at Langley AFB for resources potentially affected by the proposed action and the no-action alternative described in Chapter 2.0. In compliance with guidelines contained in the NEPA, CEQ regulations, and AFI 32-7061 (as codified in 32 CFR 989) the description of the existing environment focuses on those environmental resources potentially subject to impacts. These resources and conditions are land use, including transportation and visual; cultural resources; biological resources; water resources; hazardous materials and waste management; safety; noise; air quality; and socioeconomics and environmental justice. The expected geographic scope of potential impacts, known as the region of influence (ROI), is defined for each resource analyzed.

RESOURCES ELIMINATED FROM DETAILED CONSIDERATION

One resource was not evaluated in this EA – airspace – because it was determined that the proposed action and the no-action alternative do not involve aircraft or airspace modifications.

3.1 LAND USE, TRANSPORTATION, AND VISUAL RESOURCES

3.1.1 Definition of the Resource

The attributes of land use addressed in this analysis include land use, transportation, and visual resources. Land use focuses on general land use patterns, as well as management plans, policies, ordinances, and regulations. These provisions determine the types of uses that are allowable and identify appropriate design and development standards to address specially designated or environmentally sensitive areas. Transportation addresses roads and vehicle circulation. Visual resources are identified as the natural and manufactured features that constitute the aesthetic qualities of an area. The ROI for land use resources consists of Langley AFB.

3.1.2 Existing Conditions

LAND USE

Land uses on Langley AFB are grouped by function in distinct geographic areas. For example, aircraft operations and maintenance facilities are located in the southern portion of the base. The residential areas on base are located along the Back River in the southeastern and northeastern portions of the base.

Adopted plans and programs guide land use planning on Langley AFB. Base plans and studies present factors affecting both on- and off-base land use and include recommendations to assist on-base officials and local community leaders in ensuring compatible development. The *Langley General Plan* (Langley AFB 2003) and the *Munitions Storage Area, Area Development Plan* (Langley AFB 2004) provide an overall perspective concerning development opportunities and constraints. Area Development Plans (ADPs), part of the General Plan, provide focused information on the future organization and circulation of personnel, buildings, and equipment within portions of the base. The Munitions Storage Area (MSA) is currently designated

industrial lands while the surrounding area, while previously cleared and disturbed, is designated as open space.

The base's *Integrated Natural Resource Management Plan* (Air Force 1998a) is used to coordinate natural resource management. Langley's *Urban Forest Inventory Review and Management Plan* (Davey Resource Group 1997) is an important component of this plan. Trees are an integral component of the base's urban environment with their shade and beauty contributing to the quality of life and moderating the hard appearance of concrete structures and streets. Trees also help stabilize the soil by controlling wind and water erosion, reduce noise levels, and cleanse pollutants from the air. Trees also provide significant economic benefits. Several studies have shown that properly placed trees provide shade and act as windbreaks, helping to decrease energy consumption. Trees return overall benefits and value far in excess of the time and money invested in them for planting, pruning, care, and removal. Langley AFB officials have recognized these benefits and realize the need to protect their investment with a comprehensive, urban forest management program.

The Coastal Zone Management Act (CZMA) was enacted to develop a national coastal management program that comprehensively manages and balances competing uses of land impacts to any coastal use or resource. The CZMA federal consistency requirement (CZMA section 307), mandates that federal agency activities be consistent to the maximum extent practicable with the enforceable policies of a state management program. The federal consistency requirement applies when any federal activity, regardless of location, affects any land or water use or natural resource of the coastal zone. The question of whether a specific federal agency activity may affect any natural resource, land use, or water use in the coastal zone is determined by the federal agency.

The Virginia Department of Environmental Quality (VDEQ) oversees activities in the coastal zone of the Commonwealth through a number of enforceable programs. In reviewing the proposed action and no-action alternative, VDEQ may require agencies to coordinate with its specific divisions or other agencies for consultation or to obtain permits; it also may comment on environmental impacts and mitigation. VDEQ enforceable programs and policies pertain to fisheries management, subaqueous lands management, wetlands management, dunes management, non-point source pollution control, point source pollution control, shoreline sanitation, air pollution control, and coastal lands management. The Chesapeake Bay Local Assistance Department regulates activities in the Chesapeake Bay Resource Management Areas and Resource Protection Areas.

TRANSPORTATION

Access to Langley AFB is provided from Interstate 64 (I-64) via Armistead Avenue to the west of the base, and from Mercury Boulevard (United States [U.S.] Route 258/Virginia State Route [SR] 32), via LaSalle Avenue (SR 167) or King Street (SR 278). Langley AFB has a network of streets that provide access to all base facilities. Nealy Avenue begins at the Main Gate and continues northeast through the installation. Sweeney Boulevard is the primary east-west corridor linking directly to the West Gate at Armistead Avenue and has three lanes (center lane reversible) from the gate to the intersection with Nealy Avenue/Hammond Avenue. Parking in

some on-base areas is limited. The combination of Ward Road, Clarke Avenue, Weyland Road, and Lee Road comprise the "base perimeter road."

Langley personnel and visitors approaching the MSA use the two-lane base perimeter road and Worley Road. Worley Road extends from its intersection with the perimeter road (Weyland Road) near building 1027 across a 1,000-foot causeway to the MSA. The routes used to haul munitions from the MSA employ Worley Road and then either continue east to the flightline or turn southwest across NASA land and circle back to the west end of the flightline.

VISUAL RESOURCES

Langley AFB is located in the City of Hampton near the southern end of the lower Virginia Peninsula, between the Northwest and Southwest Branches of the Back River, a branch of the Chesapeake Bay. The base is in the Coastal Plain physiographic province on Hampton Flat, a nearly flat plain that gently slopes toward the east, with elevations between 5 and 11 feet above mean sea level (MSL).

The main base occupies 2,883 acres of the total site. The largest structures on base are the aircraft operations and maintenance facilities located in the southern portion of the base. The National Aeronautics and Space Administration (NASA) operates a facility complex in the northwestern, southern, and southeastern portion of the base. The large wind tunnels and aeronautical test equipment that comprise the NASA facility resemble a large industrial area. A number of older buildings on base, such as the Albert Kahn-designed hangars, give the base a character reflecting its history as an important air base from the beginning of the aviation era.

The MSA is bordered on the north and the east by wetlands associated with the Northwest Branch of the Back River; it is bordered on the south by Worley Road and a forested area; and it is bordered on the west by a forested area and the NASA facilities.

Much of the vegetation on base was planted at the time of the base's original construction (circa 1916). Towering oak trees are the dominant species of trees in the Langley Field Historic District. They have been used mainly as street plantings and as decorative plantings around many buildings. Significant trees are a part of the historic character of the base; therefore, standard landscaping practices would be used to alleviate harming the trees as much as possible. Vegetation in the area surrounding the MSA is more recent, replacing the area's past use as a landfill.

3.2 CULTURAL RESOURCES

3.2.1 Definition of the Resource

Cultural resources are defined as any prehistoric or historic district, site, building, structure, or object considered important to a culture, subculture, or community for scientific, traditional, or religious reasons. They can be divided into three categories: archaeological; architectural/ engineering; and traditional. Archaeological resources are locations where prehistoric or historic activity measurably altered the earth, or produced deposits of physical remains. Architectural/engineering resources include standing buildings, dams, canals, bridges, and other structures of historic significance. Architectural/engineering resources generally must be

more than 50 years old to be considered for inclusion in the National Register of Historic Places (NRHP). However, more recent structures, such as Cold War era resources, may warrant protection if they manifest "exceptional significance" or the potential to gain significance in the future. Traditional resources are resources associated with cultural practices and beliefs of a living community that are rooted in its history and are important in maintaining the continuing cultural identity of the community.

The ROI for cultural resources is the area within which the proposed action and the no-action alternative have the potential to affect existing or potentially occurring archaeological, architectural, or traditional resources. For the proposed action or the no-action alternative, the ROI is defined as Langley AFB.

3.2.2 Identified Cultural Resources

Thirteen archaeological sites and more than 250 historic architectural resources have been identified within Langley AFB boundaries. The architectural resources are found primarily within the NRHP-eligible Langley Field Historic District that encompasses most of the eastern base (United States Army Corps of Engineers [USACE] 1998). Langley AFB also has been inventoried for Cold War architectural resources (Roxlau et al. 1997).

No cultural resources have been identified within the present project area. This location was historically farmland north of Tabbs Creek in an area identified as School Neck in 1888 and the Collier Estate in 1916 (Wheaton et al. 1992). The project area was surveyed for archaeological resources in the early 1980s (Koski-Karell 1984). In 1992, the majority of the MSA project area was identified as generally disturbed with a low potential for archaeological resources due to the presence of landfills and borrow areas (Wheaton et al. 1992). For example, a landfill used from 1965 to 1972 covers the project area south of Worley Road. Older landfills are also found in the vicinity. The exception to the disturbed areas is the open area between facilities 1064 and 1066. This area is considered to have a moderate potential for historic archaeological resources associated with a 19th century farmstead (Wheaton et al. 1992). Recent surveys between Gregg Road and Tabbs Creek found that the area was heavily disturbed and did not contain any resources (personal communication Baie 2004).

Facilities within the project area consist of munitions storage igloos, magazines, and related facilities constructed between 1943 and 1983. None of the World War II or Cold War era facilities in this area is considered eligible for the National Register (personal communication Green 2004). No traditional resources or Native American issues have been identified at Langley AFB (U.S. Army Corps of Engineers [USACE] 1998). No federally recognized Indian tribes or lands are located in Virginia.

3.3 BIOLOGICAL RESOURCES

3.3.1 Definition of the Resource

For purposes of the impact analysis, biological resources are divided into three major categories: (1) terrestrial communities, (2) wetland and freshwater aquatic communities, and (3) threatened, endangered, and special status species/communities. The ROI for biological resources includes

Langley AFB and the specific areas associated with the proposed action and the no-action alternative.

3.3.2 Existing Conditions

TERRESTRIAL COMMUNITIES

Only a relatively small portion of Langley AFB is forested or remains in its natural state. Plant communities include approximately 250 acres of mixed oak-hickory hardwood forests, 60 acres of 60-year-old planted loblolly pine forests, 450 acres of tidal salt marshes, and an undetermined amount of old-field successional areas. The remaining portions of the base consist of managed lawns and developed areas of buildings, structures, and pavement. The area surrounding the existing cleared MSA consists of forested areas in the northwest, southeast, and southwest sections of the site.

Wildlife on the base are widespread species that are habitat generalists or tolerant of disturbance. This includes a wide variety of game and furbearing species, small mammals, waterfowl, songbirds, raptors, amphibians, reptiles, and fish. Two osprey nests exist within the MSA. The proximity of the base to estuarine and marine habitats of Chesapeake Bay provides habitat for a variety of neotropical migrants and waterfowl.

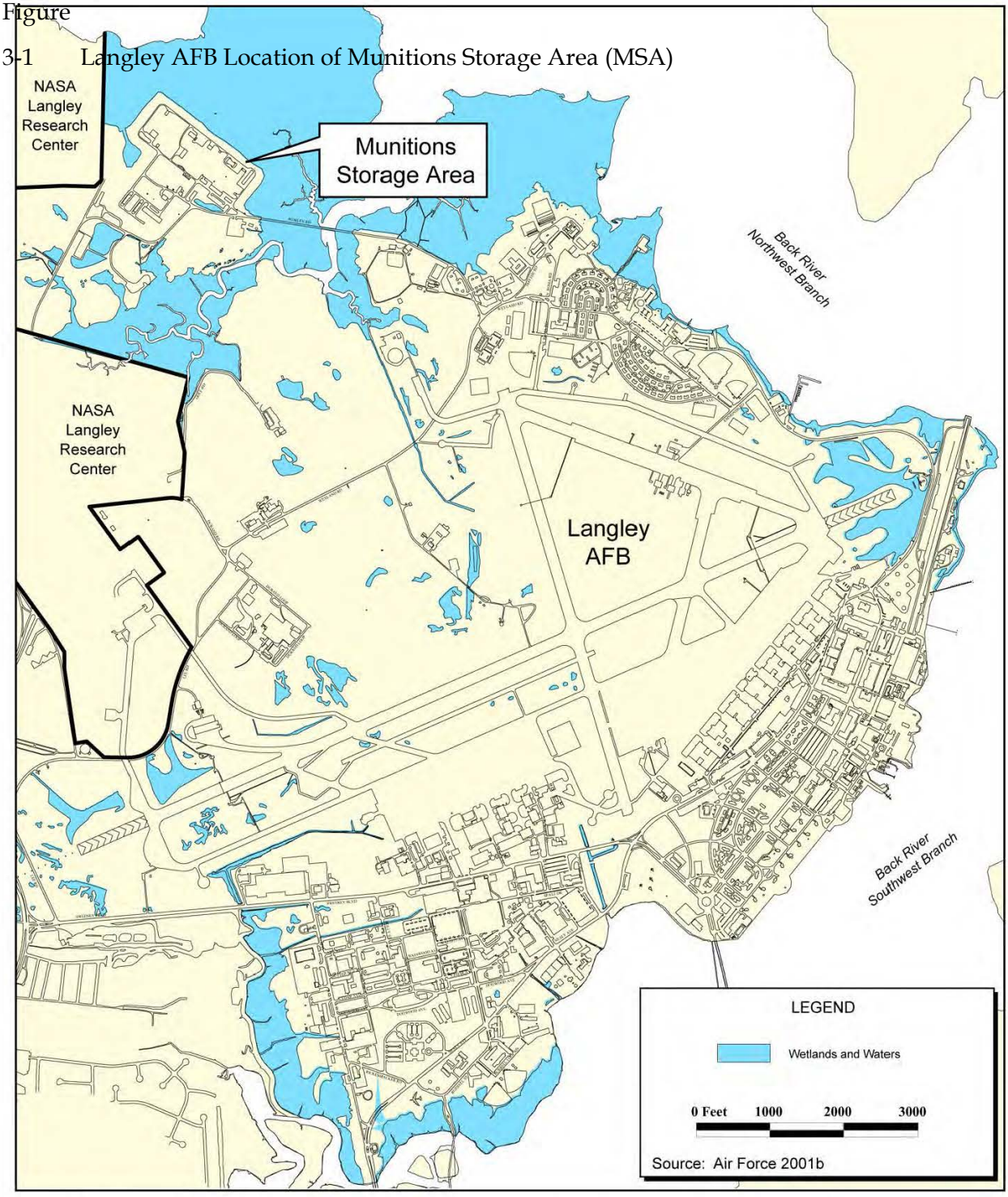
WETLAND AND FRESHWATER AQUATIC COMMUNITIES

Wetlands at Langley AFB encompass approximately 652 acres, 462 acres of which are non-freshwater estuarine wetlands. Freshwater wetlands on base include palustrine forested, emergent, and scrub-shrub wetlands. Forest and scrub-shrub wetlands occur in low-lying upland areas with nutrient-poor sandy soils and are dominated by bottomland hardwood trees and shrubs. Emergent wetlands primarily occur as small remnant patches, along drainage ditches, and as tidal marsh (Hobson 1996, Air Force 1998a). A wetlands delineation of the entire base was conducted in late 2000 and resulted in the wetlands map presented in Figure 3-1 (Air Force 2001a). The wetlands identified during this effort are under jurisdictional determination review by the Norfolk USACE (personal communication Wittkamp 2003).

Salt and freshwater marshes of the Northwest and Southwest Branches of the Back River, New Market Creek, Brick Kiln Creek, Tabbs Creek, and Tides Mill Creek surround the base on three sides. Tidal flow from the Chesapeake Bay is substantial along these margins; however, most inland freshwater wetlands have been filled, drained to ditches, or converted into golf course features (Air Force 1998a). Currently, Langley AFB is in the process of restoring and stabilizing sections of Chesapeake shoreline through the establishment of smooth and saltmeadow cordgrass fringe marsh to produce a more erosion–resistant shoreline, improve water quality and promote the Chesapeake Bay's unique estuarine ecosystem.

Wetlands are located outside the cleared area surrounding the MSA on the north, northeast and east sides. Across Worley Road, south and southeast of the MSA are forested wetlands as is the case between the NASA and the northwest edge of the MSA (Figure 3-1).

Figure
3-1 Langley AFB Location of Munitions Storage Area (MSA)



THREATENED, ENDANGERED, AND SPECIAL STATUS SPECIES/COMMUNITIES

Sixteen special status species occur, or have the potential to occur, on Langley AFB and are presented in Table 3-1. Eleven have special state status and five have additional federal status. No critical habitat occurs on base. Langley AFB provides habitat for one federally listed threatened species: the bald eagle. Surveys conducted in 1993 and 1994 indicated that foraging by bald eagles occurs to a limited extent within creeks and marshes of the base. Habitat suitable for nesting or roosting occurs among the loblolly pines on the northern side of the base, but no nesting or long-term roosting has ever been observed. Uniform age/size structure of loblolly pine stands may limit use of the base as nesting or roosting habitat (Barrera 1995). The second federally listed threatened species, the northeastern beach tiger beetle, has no record of occurrence on base; it typically inhabits broad sandy beaches and has become a species of concern within the Chesapeake Bay ecosystem. The third federally listed threatened species, the piping plover, is associated with sandy beaches, which are not found on Langley AFB. The Virginia least trillium, found in forested wetlands, is a federal species of concern.

Virginia special status species include the barking treefrog, canebrake rattlesnake, Foster's tern, glossy ibis, great egret, Harper's fimbristylis, least tern, Mabee's salamander, night-heron yellow-crowned, and the peregrine falcon. The canebrake rattlesnake has been found along the shore of the Southwest Branch of the Back River.

The USFWS, Virginia Field Office, was notified of the proposed action and the no-action alternative (see Appendix A) and the Virginia Department of Conservation and Recreation's National Heritage website for rare, threatened and endangered plants and animals (Virginia Department of Conservation and Recreation [DCR] 2003) was reviewed to complete Table 3-1.

Table 3-1. Threatened, Endangered, and Special-Status Species/Communities that Occur or Potentially Occur on Langley AFB

Species	*Status*	*Areas of Occurrence*
PLANTS		
Harper's fimbristylis *Fimbristylis perpusill*	SE	Coastal seasonal ponds.
Virginia least trillium *Trillium pusillum var. virginianum*	FSC	Forested wetlands and mesic woods including the "green sea" wetlands. Recorded from the City of Hampton.
INVERTEBRATES		
Northeastern beach tiger beetle *Cicindela dorsalis dorsalis*	FT	Broad beaches with well-developed sand dunes.
AMPHIBIANS		
Barking treefrog *Hyla gratiosa*	ST	Breeds in coastal seasonal fish-free freshwater ponds. Base at northern edge of range. Spends warm months in treetops, seeks moisture during dry periods by burrowing among tree roots and clumps of vegetation.
Mabee's salamander *Ambystoma mabeei*	ST	Breeds in coastal seasonal freshwater ponds. Needs fish-free breeding habitat. Tupelo and cypress bottoms in pine woods, open fields, and lowland deciduous forest.

Table 3-1. Threatened, Endangered, and Special-Status Species/Communities that Occur or Potentially Occur on Langley AFB (continued)

Species	*Status*	*Areas of Occurrence*
Northern diamond-backed terrapin *Malaclemys terrapin terrapin*	FSC	Prefers the brackish water of estuaries, tidal marshes, and the tidal portions of rivers. It is sometimes seen in the Atlantic Ocean. Nesting occurs on sandy beaches or dunes
REPTILES		
Canebrake rattlesnake *Crotalus horridus atricaudatus*	SE	Meadows, canebrake or "green sea" wetlands. At risk because of wetland loss. Swampy areas, canebrake thickets, and floodplains.
BIRDS		
Bald eagle *Haliaeetus leucocephalus*	FT/SE	Forages occasionally on base. Nests within three miles of the base.
Foster's tern *Sterna forsteri*	SSC	Coastal and marshland bird that fishes the waters of the region.
Glossy ibis *Plegadis falcinellus*	SSC	Wades in marshes and fishes the waters of the region.
Great egret *Asmerodius albus*	SC	Palustrine and estuarine wetlands; marshes.
Night-heron yellow-crowned *Nyctanassa violacea violacea*	SSC	Wades in marshes and fishes the waters of the region.
Northern harrier *Circus cyaneus*	SSC	Hunts over marshes and fields and is known to nest in the area.
Least tern *Sterna antillarum*	SSC	Found feeding or nesting on beaches in the area.
Peregrine falcon *Falco peregrinus*	SE	Observed foraging over salt marshes on base. Open wetlands near cliffs.
Piping plover *Charadrius melodius*	FT/ST	Prefers areas with expansive sand or mudflats (for foraging) in close proximity to a sand beach (for roosting). Fifty-two designated critical habitat units from North Carolina south to northern Florida along mainland beaches and barrier islands.
Notes: FSC = Federal Species of Concern FT = Federal Threatened SC = State Candidate	SE = State Endangered SSC= State Special Concern ST = State Threatened	

3.4 WATER RESOURCES

3.4.1 Definition of the Resource

Water resources include surface and groundwater features located within the base as well as watershed areas affected by existing and potential runoff from the base, including floodplains. The ROI is defined as the base and the immediate vicinity.

3.4.2 Existing Conditions

SURFACE WATER

Langley AFB occupies a flat lowland peninsula with a gentle eastward slope of 1 foot per mile and elevations of 5 to 11 feet MSL within the Atlantic Coastal Plain physiographic province. The base is bounded on the northeast side by the Northwest Branch of the Back River, and on

the southeast side by the Southwest Branch of the Back River, both of which flow into the Chesapeake Bay. Storm water flows within the low-lying MSA leave the site primarily by sheet flow and through a series of shallow ditches and swales.

GROUNDWATER

In the Langley AFB area, groundwater occurs in a shallow water table aquifer, an upper artesian aquifer system, and the principal artesian aquifer system. All three aquifers in this area contain water of moderate to poor quality due to high salinity and total dissolved solids; they have little or no potential to provide a conventional water supply.

FLOODPLAINS

Due to its proximity to the Back River and the Chesapeake Bay, much of Langley AFB lies within the 100-year floodplain. Langley AFB is susceptible to high tide surges during storms and spring tides, and flooding is sometimes severe on the base. Figure 3-2 illustrates the extent of the floodplains on Langley AFB. A 100-year flood would cover the entire area designated 50-year flood zone and the areas designated in the 100-year flood zone (see Figure 3-2).

Much of the MSA is located in the 100-year floodplain. An examination of Figure 3-2 indicates that areas above the 100-year floodplain are located within the clear zone on the western end of the runway, and at a few small locations on the north side of the base within the golf course, away from existing infrastructure.

3.5 HAZARDOUS MATERIALS AND WASTE MANAGEMENT

3.5.1 Definition of the Resource

Hazardous materials are identified and regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); the Occupational Safety and Health Administration (OSHA); and the Emergency Planning and Community Right-to-Know Act (EPCRA). Hazardous materials have been defined in AFI 32-7086, *Hazardous Materials Management*, to include any substance with special characteristics that could harm people, plants, or animals. Hazardous waste is defined in the Resource Conservation and Recovery Act (RCRA) as any solid, liquid, contained gaseous or semisolid waste, or any combination of wastes that could or do pose a substantial hazard to human health or the environment. Waste may be classified as hazardous because of its toxicity, reactivity, ignitibility, or corrosivity. In addition, certain types of waste are "listed" or identified as hazardous in 40 CFR 263. The ROI for this resource is defined as Langley AFB.

3.5.2 Hazardous Materials

The majority of hazardous materials used by Air Force and contractor personnel at Langley AFB are controlled through an Air Force pollution prevention process called HAZMART. This process provides centralized management of the procurement, handling, storage, and issuing of hazardous materials and turn-in, recovery, reuse, or recycling of hazardous materials. The HAZMART process includes review and approval by Air Force personnel to ensure users are

Figure
3-2 Langley AFB Floodplain Map

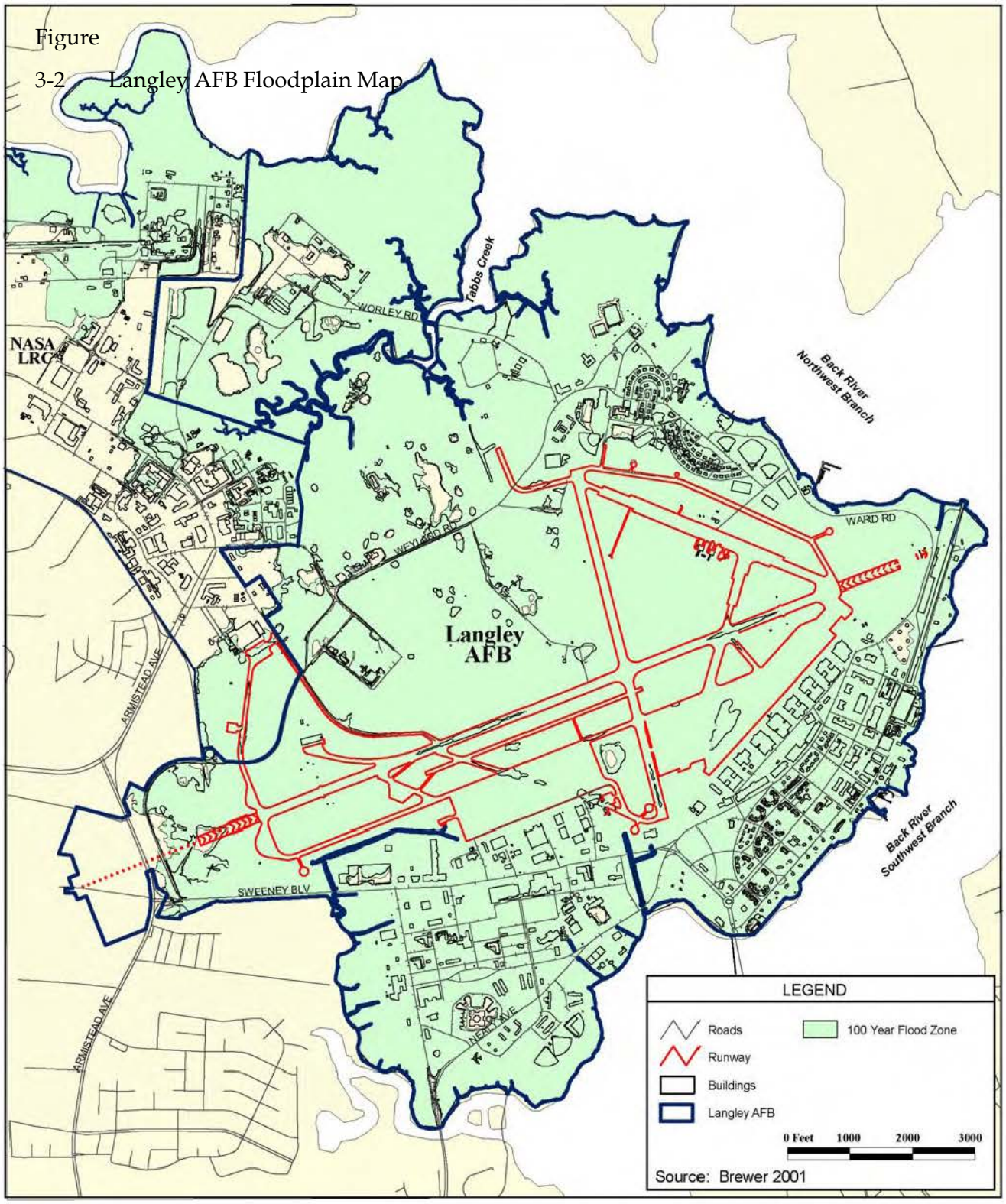


Figure 3-2

Langley AFB Floodplain Map

aware of exposure and safety risks. Hazardous materials used for the maintenance of munitions trailers and transport vehicles include paints and solvents and automotive-type fluids (lubricating oils, brake fluid). A paint booth is located in Facility 1053.

3.5.3 Hazardous Waste

Langley AFB is a large-quantity hazardous waste generator. Hazardous wastes generated during base operations and maintenance activities include solvents, metal-contaminated spent acids, and sludge from wash racks. Langley AFB recycles all lubricating fluids, batteries, oil filters, and shop rags. Hazardous wastes generated within the MSA are managed in accordance with the *Langley AFB Hazardous Waste Management Plan*, dated 1 August 2001 at the locations identified in Table 3-2.

Table 3-2. Initial Accumulation Points in the MSA

Building #	*Hazardous Wastes Description*
1053	Aerosol Cans
1067	Brake Fluids, Denatured Alcohol, ZEP P/C Filter, Aerosol Cans
1069	Fluorescent Bulbs, Alkaline Batteries
1077	Aerosol Cans
Source: personal communication Hailey, 2004	

The Langley AFB Spill Prevention and Facility Response Plan (certified in September 2000) is currently being updated. The plan meets Federal Spill Prevention Control and Countermeasures requirements, Virginia Oil Discharge Contingency Plan requirements, and Coast Guard requirements.

Storage Tanks

With in the MSA there are currently 12 active or inactive storage tanks. Table 3-3 provides a listing of the storage tanks and notes their status, size, and contents. Seven of these tanks store fuel oil because natural gas is not available for heating purposes. Two tanks support emergency generators and one storage tank is used to fuel MSA vehicles. Facility #1067 (Ammunition-Maintenance Shop) currently houses an oil-water separator.

Environmental Restoration Program

The Department of Defense (DoD) developed the ERP to identify, investigate, and remediate potentially hazardous material disposal sites that existed on DoD property prior to 1984. Forty-eight ERP sites, including one at Bethel Manor Housing, have been identified since the ERP began at Langley AFB. In addition, eight areas of concern (AOCs) have also been identified. Of the forty-eight sites, thirty-seven sites have been closed or require no further action, seven ERP sites are in the cleanup phase, and four sites are under study. The *Langley AFB Management Action Plan* (Air Force 2003) summarizes the current status of the base environmental programs and presents a comprehensive strategy for implementing actions necessary to protect human

health and the environment. This strategy integrates activities under the ERP and the associated environmental compliance programs that support full restoration of the base.

Table 3-3. Storage Tanks in MSA

Tank ID	*Tank Type*	*Stats*	*Size*	*Fuel*
1050	AST	Active	500	Fuel Oil
1053	UST	Closed in-place	1000	Fuel Oil
1053.1	AST	Active	500	Fuel Oil
1053.2	AST	Active	500	Diesel
1056	AST	Active	500	Fuel Oil
1061	AST	Active	500	Fuel Oil
1061.1	AST	Active	500	Fuel Oil
1067	AST	Active	1000	Fuel Oil
1069.1	AST	Active	425	Diesel
1075	UST	Closed in-place	2000	Fuel Oil
1075.1	AST	Removed	500	Fuel Oil
1077	AST	Active	250	Diesel
1077	UST	Removed	1000	Diesel
Source: Langley AFB, 2004 - STOICS				

ACC policy requires that any proposed project on or near a Langley AFB ERP site be coordinated through the Langley ERP Manager. MSA development would take place at or near several ERP sites (LF-11, LF-13, LF-18, SS-24, and OT-64).

ERP Site LF-11 is a former landfill covering approximately 16.5 acres north of Tabbs Creek. This landfill is located south of Worley Road outside of the cleared area associated with the MSA. The landfill was in use from 1965 to 1972, and the majority of the landfill materials probably were municipal-type refuse. Waste oils, solvents in drums, paint, thinners, empty pesticide and herbicide containers, tires, fabrics, construction debris, and sanitary wastewater treatment plant sludge may have been deposited at this site. This site is overgrown with mature trees, bamboo, tall grass and other vegetation. A Remedial Investigation (RI) was conducted in 1997; the Remedial Investigation report was completed in July 2000; the final Feasibility Study (FS) was completed in June 2001; the draft Proposed Plan (PP) was submitted in April 2001; and the Record of Decision (ROD) was signed by the Air Force in December 2001.

ERP Site LF-13 is a former landfill covering approximately 12 acres west of the MSA. This site was reportedly used for about a month and the majority of landfill materials were probably municipal-type refuse. Four monitoring wells are associated with site LF-13. This site is located within designated wetlands and is occasionally used for deer hunting. The RI for this site was conducted in 1997; a field investigation of the landfill area was conducted in October 1999; the final RI report was submitted in December, 1999; the final PP was completed in May 2000; the ROD for no further action was signed on 26 September 2000, and the site is considered closed. Supplemental field work was conducted at this site (four earthen mound test pits). No waste materials were encountered at this site and the soil appears clean and free of organic vapors (personal communication Tice 2004).

ERP site LF-18 is a former landfill covering approximately 13 acres west of the MSA and east of NASA property. The landfill was used in the 1930s for the disposal of wood, stumps, and construction debris. Six monitoring wells exist at this site. The area is currently densely overgrown, partially wooded, and some areas have very marshy conditions. A draft FS was submitted in May 2000 and the final RI report was submitted in October 2000. The draft PP was submitted in April 2001, the final FS was submitted in May 2001, and the ROD was signed on December 2001 by the Air Force. The ROD is being revised; land use controls will not be affected by the revision of the ROD. This site is considered closed with institutional controls.

ERP Site SS-24 is an abandoned waste oil storage area covering approximately 0.1 acres on the south side of Worley Road, near the existing parking lot. Waste oils and solvents were stored in two fiberglass Underground Storage Tanks (USTs) at this site from 1972 to 1986. Spills of these fluids occurred, along with compromises to the wall of at least one of the tanks. Solvents and oils were pumped from the tanks in 1986. An Interim Remedial Action (IRA) was completed in 1996. A portion of the IRA included the removal of the two USTs, along with the removal of soil associated with the tank contamination. According to the 1 CES/CEVR Tank Program Manager, a single 5,000-gallon vaulted tank was removed in the early part of 1999. The tank was used to hold waste-water that contained pesticides. A closure report is on file. A Site Inspection Addendum was completed in autumn of 2000 indicating that no further action would be required. A Decision Document was signed on November 1, 2000, and this site is considered closed.

ERP Site OT-64 is an operable unit that addresses base-wide ground water contamination from 23 ERP sites and an additional six areas of concern. In general, the contaminants of concern in the groundwater are volatile organic carbons, semi-volatile organic carbons, pesticides, herbicides, and some metals (personal communication Patterson 2004) depending on the individual site of contamination. A groundwater monitoring program is underway for all associated sites. A data gap summary was finalized in July, 2001. An Engineering Evaluation has been draft for three of the twenty-three ERP sites and a FS is in progress.

3.5.4 Solid Waste Management

Solid waste generated on Langley AFB is removed by contract services to either the City of Hampton's Bethel Sanitary Landfill or to the Hampton Waste-to-Energy facility for incineration. In FY 2002, the base generated 8,021 tons of solid waste and diverted 1,830 tons through recycling and composting activities. The base also generated 4,707 tons of construction and demolition debris and was able to recycle 566 tons of the debris. Big Bethel is a sanitary landfill, but also accepts construction and demolition waste. In 2001, this facility received 447,623 tons of waste of all types. With a total capacity of about 24,654,982 tons, it has a remaining useful life of about 55 years (Commonwealth of Virginia 2003). In addition, there are five dedicated construction/demolition waste disposal landfills in the Hampton Roads area (Table 3-4). Their combined capacity is 24,558,463 tons. These facilities together received 2,968,610 tons of construction and demolition waste in 2001, and have a collective remaining useful life of about 8.3 years.

Table 3-4. Capacity, Disposal Rates, and Remaining Useful Life (RUL) for Construction-Demolition Waste Disposal Facilities in Hampton Roads

Name	*Permit*	*County*	*Capacity (tons)*	*2001 Disposal (tons)*	*RUL*
Debris Landfill Indian Trail Disposal Facility	451	Suffolk	178,888	87,396	2.0
Higgerson-Buchanan Inc.	493	Chesapeake	518,256	103,651	5.0
Thrasher CDD Landfill	305	Chesapeake	150,000	132,776	1.1
Waltrip Landfill	322	James City	12,000	3,514	3.4
Wolftrap Operations Inc. Debris Landfill	436	York	116,713	58,220	2.0
Total for Hampton Roads			975,857	385,666	2.5[1]
Total for Virginia			24,558,463	2,968,610	8.3

Note: 1. This is the combined (average) RUL for the five facilities, not the sum of their individual Rules.
Source: Commonwealth of Virginia Department of Environmental Quality, June 2003

Asbestos Waste/Lead-Based Paint

An asbestos management plan provides guidance for the identification of asbestos-containing materials (ACMs) and the management of asbestos. The 1st FW *Asbestos Management and Operations Plan* provides guidance on the management of asbestos. An asbestos facility register is maintained by Civil Engineering. Persons inspecting, designing, or conducting asbestos response actions in public or commercial buildings must be properly trained and accredited through an applicable asbestos training program. The design of building alteration projects and requests for self-help projects are reviewed to determine if asbestos contaminated materials are present in the proposed work area and, if so, are disposed of in an off-base permitted landfill.

The *1st FW Lead-Based Paint Management and Operations Plan* contains policies and procedures associated with the management of lead-based paint. Section 11 of the plan notes that Facility 1077 had eight positive sample results for lead-based paint. There are no other sampling results for other facilities within the MSA. Given the age of many of these facilities, lead-based paint may be present in additional facilities.

3.6 SAFETY

3.6.1 Definition of the Resource

This section addresses ground and explosive safety issues associated with activities conducted by units stationed at, or operating from, Langley AFB. Ground safety considers issues associated with operations and maintenance activities that support base and flight operations, including fire and crash response. Explosive safety discusses the management and use of ordnance or munitions associated with airbase operations and training activities conducted in various elements of training airspace. The ROI for safety includes Langley AFB and the immediate vicinity.

3.6.2 Existing Conditions

GROUND SAFETY

Day-to-day operations and maintenance activities conducted on Langley AFB are performed in accordance with applicable Air Force safety regulations, published Air Force Technical Orders, and standards prescribed by Air Force Occupational Safety and Health (AFOSH) requirements. Safety issues related to the proposed action focus on factors affecting demolition. All contractors performing demolition on Langley AFB are responsible for following safety regulations and worker compensation programs, and are required to conduct construction or demolition activities in a manner that does not pose a risk to their workers or Langley AFB personnel. In addition, Langley AFB has established an industrial hygiene program that addresses exposure to hazardous materials, use of personal protective equipment, and the availability of Material Safety Data Sheets. Contractor personnel are required to follow this program.

The Langley AFB military fire department provides crash response. Initial crash response considers such factors as rescue, evacuation, fire suppression, safety, and elimination of explosive devices, ensuring security of the area, and other actions immediately necessary to prevent loss of life or further property damage. Subsequently, the investigation phase is accomplished. Currently, the unit is fully capable of meeting its requirements. There are no identified equipment shortfalls, or limiting factors.

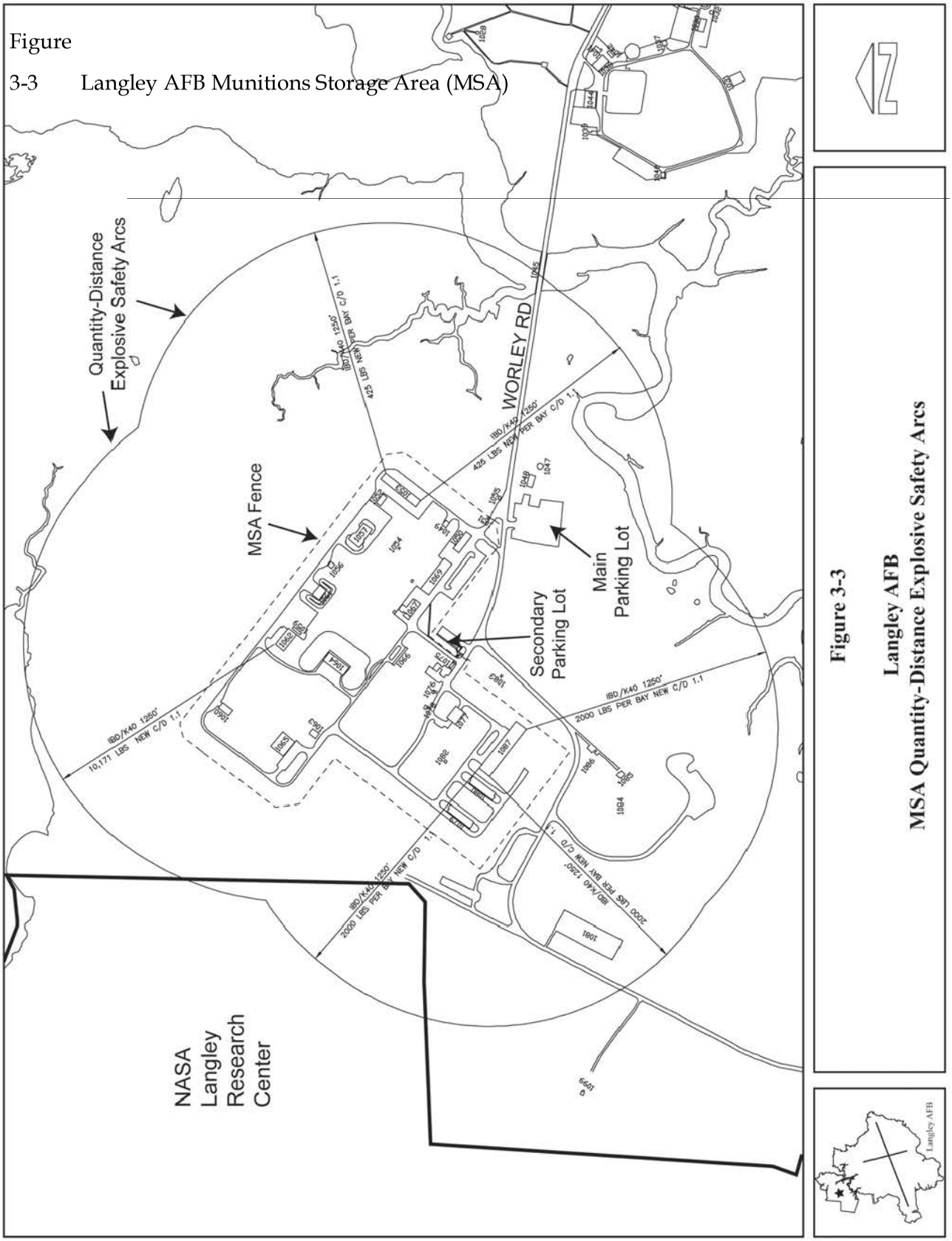
Unified Facilities Criteria (UFC) 3-260-01, *Airfield and Heliport Planning and Design Criteria* (2001), limits locations and heights of objects and facilities around and in the immediate vicinity of an airfield to minimize hazards to airfield and flight operations. Any condition not meeting these requirements is classified as an approved waiver, a permissible deviation, an exemption, or a violation (UFC 3-260-01). Langley AFB is in compliance with all critical requirements (personal communication Baie 2004).

EXPLOSIVE SAFETY

Both live and inert munitions are currently stored and handled at Langley AFB. All munitions are handled and stored in accordance with Air Force Explosive Safety Directives, and trained, qualified personnel using Air Force approved technical data carry out all munitions maintenance. The Air Force imposes procedures for arming and de-arming munitions and ordnance. Air Force safety procedures require safeguards on weapons systems and ordnance that ensure against inadvertent releases. All storage facilities are approved for the specific ordnance involved; and all handling and storage of munitions is undertaken within the confines of a Quantity Distance (Q-D) explosive safety arc. The close proximity of nearby NASA facilities (located northwest of the MSA) to the MSA necessitates a Q-D waiver, which is already in place. The existing Q-D explosive safety arcs currently in place for the MSA are shown on Figure 3-3.

Personnel at Langley AFB control, maintain, and store all ordnance and munitions required for mission performance. Ordnance is handled and stored in accordance with Air Force explosive safety directives (Air Force Manual [AFM] 91-201), and all munitions maintenance is carried out

Figure
3-3 Langley AFB Munitions Storage Area (MSA)



by trained, qualified personnel using Air Force-approved technical data. Sufficient storage facilities are available to meet current mission requirements, and all facilities are sited for the ordnance they store (personal communication Munro, 2004).

3.7 NOISE

3.7.1 Definition of the Resource

Noise is defined as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, or is otherwise annoying. Human response to noise varies according to the type and characteristics of the noise source, distance between source and receptor, receptor sensitivity, and time of day. The ROI for noise includes the area surrounding the project location.

Sound is measured with instruments that record instantaneous sound levels in decibels (dB). A-weighted sound level measurements (often denoted dBA) are used to characterize sound levels that are heard especially well by the human ear. All sound levels analyzed in this EA are A-weighted; thus, the term dB implies dBA unless otherwise noted.

3.7.2 Existing Conditions

At Langley AFB, noise contributions from aircraft operations and ground engine run-ups at the airfield have been calculated using the NOISEMAP model, the standard noise estimation methodology used for military airfields. NOISEMAP uses the following data to develop noise contours: aircraft types, runway utilization patterns, engine power settings, airspeeds, altitude profiles, flight track locations, number of operations per flight track, engine run-ups, and time of day. The Air Installation Compatible Use Zone indicates that the alignment taken with proposed action and no-action alternative would be primarily in the 60-65 Day-Night Average Sound Level (DNL) noise contours (Air Force 1997).

3.8 AIR QUALITY

3.8.1 Definition of the Resource

Air quality is described by the atmospheric concentration of six pollutants: ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), particulate matter equal to or less than 10 micrometers in diameter (PM_{10}), and lead (Pb).

3.8.2 Existing Conditions

Langley AFB is located within the Hampton Roads Intrastate Air Quality Control Region (AQCR) #223. The Hampton Roads AQCR includes four counties (York, James City, Isle of Wright, and Southampton), as well as nine independent cities (Chesapeake, Hampton, Newport News, Norfolk, Poquoson, Portsmouth, Suffolk, Virginia Beach, and Williamsburg). This area includes substantial industry, several military and commercial airfields, and a large population that generates air quality emissions. Table 3-5 summarizes the baseline emissions (stationary and mobile) of criteria pollutants and precursor emissions for this AQCR. Baseline Langley AFB emissions are incorporated into the totals for the AQCR. For each criteria pollutant,

Langley AFB contributes less than 1 percent of the regional emissions. The base has been issued a Synthetic Minor operating permit from the VDEQ program.

Table 3-5. Baseline Emissions for Langley AFB Affected Environment

Emissions	*Pollutants (tons per year)*				
	CO	**VOCs**	**NO_x**	**SO_2**	**PM_{10}**
Hampton Roads AQCR[1]	257,325	79,750	83,560	110,220	49,860
Langley AFB	768.09	115.18	283.38	6.47	10.29
---Stationary Sources[2]	7.19	10.68	42.18	0.87	2.09
---Mobile Sources[3]	760.9	104.5	241.2	5.6	8.2
Sources: [1]Federal Register (629123) June 26, 1997; [2]Air Force 2003; [3]Air Force 2000					

Air quality in Hampton Roads AQCR is currently designated as attainment for all criteria pollutants. For ozone and its precursor pollutants (volatile organic compounds [VOCs] and nitrogen oxides [NO_x]), the affected area is considered in "transitional attainment" or "maintenance." On April 15, 2004, the USEPA designated the City of Hampton as marginal nonattainment for the newly established 8-hour O_3 standard effective as of June 15, 2004 (USEPA 2004a). The USEPA will revoke the 1-hour O_3 standard in June 2005 (USEPA 2004b). Also, monitoring data are being collected for determining compliance with the newly developed standard for particulates less than 2.5 micrometer in diameter ($PM_{2.5}$). The Commonwealth of Virginia has recommended that, based on the most recent 3 years of monitoring that the entire state be designated as attainment for the $PM_{2.5}$ standard. The USEPA intends to promulgate its official designations in December 2004 (USEPA 2004c).

REGULATORY SETTING

The CAA Section 176(c), General Conformity, establishes certain statutory requirements for federal agencies with proposed federal activities to demonstrate conformity of the proposed activities with each state's State Implementation Plan (SIP) for attainment of national ambient air quality standards (NAAQS). In 1993, USEPA issued the final rules for determining air quality conformity. Federal activities must not (1) cause or contribute to any new violation; (2) increase the frequency or severity of any existing violation; or (3) delay timely attainment of any standard, interim emission reductions, or milestones in conformity to a SIP's purpose of eliminating or reducing the severity and number of NAAQS violations or achieving attainment of NAAQS. General conformity applies only to non-attainment and maintenance areas. If the emissions from a federal action proposed in a non-attainment area exceed annual emission thresholds identified in the rule (*de minimis* levels) or are regionally significant (identified as equal to, or more than, 10 percent of the emissions inventory for the region), a conformity determination is required of that action. The thresholds become more restrictive as the severity of the non-attainment status of the region increases. For the newly adopted 8-hour O_3 and the $PM_{2.5}$ standards, according to USEPA Guidance (March 2000), conformity and other planning requirements would be triggered on the effective date of the final USEPA designations.

3.9 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

3.9.1 Definition of the Resource

The socioeconomic resources of the potentially affected region, represented as the ROI, are characterized in terms of population and housing, economic activity, community services, and infrastructure. Because these resources would be interrelated in their response to the proposed action at Langley AFB, their current condition is assessed in order to provide a basis for analyzing potential socioeconomic impacts. A change in employment, for example, may lead to population movements into or out of a region and, in turn, lead to changes in demand for housing and public services. The significance of these estimated impacts is then evaluated by comparing their characteristics to the baseline conditions described in this section.

Virginia is unique in that cities that have reached a certain size become independent governmental jurisdictions from the counties in which they are geographically located. The Virginia Peninsula is made up of the counties of James City, Gloucester, Matthews, and York and the independent cities of Williamsburg, Newport News, Poquoson, and Hampton. South Hampton Roads includes Isle of Wight County and the independent cities of Norfolk, Suffolk, Portsmouth, Chesapeake, and Virginia Beach. The center of the area, in which Langley AFB is situated, is highly urbanized, while the outer regions tend to be more rural.

3.9.2 Existing Conditions

The ROI for this analysis includes York County and the independent cities of Hampton, Newport News, and Poquoson, which are the areas surrounding Langley AFB. It is expected that potential socioeconomic impacts of the proposed action would be concentrated in this region. The proposed action would be contained within the confines of Langley AFB.

POPULATION AND HOUSING

The 2000 Census established the ROI population as 394,450 persons, an increase of 10.4 percent from the 1990 population of 357,265 (see Table 3-6). By 2003, population in the ROI had grown to 401,317 persons, a 1.7 percent increase since 2000. The current population in the ROI accounts for 5.6 percent of the Virginia population of 7.4 million persons.

Table 3-6. Regional Demographics

	Hampton	*Newport News*	*Poquoson*	*York County*	*ROI*
2003 Population	146,878	181,647	11,844	60,948	401,317
2000 Population	146,437	180,150	11,566	56,297	394,450
1990 Population	133,793	170,045	11,005	42,422	357,265
Population density per square mile	2828.0	2637.9	745.4	532.9	1630.0
2010 Projection	149,600	184,100	12,000	68,800	414,500
2020 Projection	152,600	187,100	12,300	80,000	432,000
2030 Projection	155,600	190,100	12,600	91,000	449,300

Sources: U.S. Bureau of Census 2000, 2004; VEC 2003.

Population density in the ROI is 1,630 persons per square mile, ranging from 533 persons per square mile in York County to over 2,800 persons per square mile in the City of Hampton. Overall, the state has a population density of 179 persons per square mile. The combined regional population is projected to increase at an average annual rate of 0.5 percent, reaching 414,500 persons by the year 2010. By the years 2020 and 2030, the population of the region is expected to grow to 432,000 and 449,300 persons, respectively.

Based on Langley AFB population figures for FY 2002, the base-related population amounts to approximately 26,845 individuals (see Table 3-7). Of this total, 18,539 persons are military and family members, and the remaining 8,306 persons are civilian employees and family members. The total Langley AFB population represents 6.7 percent of the ROI population.

Table 3-7. Langley AFB Population

	September 2002
Military assigned	8,470
Living on-base	1,373
Living off-base	7,097
Military family members	10,069
Living on-base	6,244
Living off-base	3,825
Civilians	8,306
Appropriated fund civilians	2,074
Other civilians[1]	1,037
Civilian family members[2]	5,195

Notes: 1. This figure represents non-appropriated fund contract civilians and private business.
2. This figure calculated based on Census average household size for the ROI.
Source: Air Force 2002a.

According to the 2000 Census, there were 156,429 housing units in the ROI, of which 147,739 were occupied (see Table 3-7). An estimated 83,916 of the occupied units (57 percent) were owner-occupied, while the remaining 63,823 (43 percent) were renter-occupied. The vacancy rate in the ROI is 5.56 percent compared to 7.06 percent in the state. Approximately one-quarter of the 8,690 vacant homes are recreation homes, seasonal homes, and other housing classifications. Over one-third of the housing in the ROI is located in Hampton (37 percent), with Newport News accounting for almost half (47 percent). The median value of housing units in 2000 ranged from a low of $91,100 in Hampton to a high of $153,400 in Poquoson, compared to the state median home value of $125,400.

There are approximately 3,000 on-base housing units at Langley AFB, including both military family housing (MFH) units and unaccompanied personnel housing (UPH) units. The UPH inventory includes permanent party dormitory space, visiting officer quarters, and visiting airmen quarters.

Table 3-8. Housing Characteristics

	Hampton	*Newport News*	*Poquoson*	*York County*	*ROI*
Total Housing Units	57,311	74,117	4,300	20,701	156,429
Occupied Units	53,887	69,686	4,166	20,000	147,739
Vacancy Rate	5.97%	5.98%	3.12%	3.39%	5.56%
Ownership Rate	58.6%	52.4%	84.1	75.8%	58.6%
Average Household	2.49	2.50	2.75	2.78	2.67
Median Value	91,100	96,400	153,400	152,700	--
Sources: Census 2000.					

ECONOMIC ACTIVITY

The regional economy has been expanding since the last recession in 1991 but began to slow in 2001 and 2002. Employment in the region has been growing at 2.3 percent annually over the past 20 years, slightly higher than the national rate (HRPDC 2003). The military and defense contractors, including those on and associated with Langley AFB, provide a significant portion of Hampton and Newport News employment. The Hampton Roads region, which includes the ROI, has one of the most highly concentrated military populations in the U.S., with military employment comprising 11.5 percent of total regional employment.

Langley AFB is a major consumer in the local economy, not only due to the purchase of goods and services to support its day-to-day operations, but also because of the household spending of its military and civilian personnel and their families. Besides purchases and wages, Langley AFB is responsible for other economic activity in the ROI. Federal impact funds are provided to defray some of the community educational costs for military dependents receiving education in the civilian community. In addition, many military and DOD civilian retirees and their families live in the region, with their retirement pay contributing to the local economy.

EMPLOYMENT

The most recent labor market information indicates that the civilian labor force in the ROI stands at 200,138 (see Table 3-9). The civilian labor force grew 11.9 percent during the 1990s, and has grown an additional 6.0 percent since the year 2000. The current regional unemployment rate is 4.5 percent, compared to the state unemployment rate of 3.6 percent. In 1990, the regional unemployment rate was 5.0 percent, and declined over the decade to a low of 2.5 percent in 2000.

Employment in the region amounted to 173,364 jobs in 2002 (see Table 3-10). The services industry is by far the largest employment sector, accounting for 36.0 percent of regional employment. Government and government enterprises contribute 21.3 percent of all jobs in the ROI. Of total government employment, approximately 40 percent are military, 20 percent are federal civilians, and 40 percent are state and local government employees. Manufacturing is the third largest sector in the region, accounting for 15.8 percent of total employment.

Table 3-9. Labor Market Information

	Hampton	*Newport News*	*Poquoson*	*York County*	*ROI*
Labor Force 2004	74,038	88,997	6,436	30,667	200,138
2000	70,593	84,242	6,128	27,880	188,843
1990	63,667	79,447	--	25,672[1]	168,789
Unemployment 2004	4.7%	5.1%	2.8%	2.6%	4.5%
2000	2.7%	2.8%	1.7%	1.6%	2.5%
1990	5.3%	5.3%	--	3.4%[1]	5.0%

Notes: 1. 1990 Data for York County includes data for the City of Poquoson.
Source: VEC 2004.

Personnel associated with Langley AFB totaled 11,581 employees in FY 2002 (Air Force 2002A). Military personnel account for 8,470 jobs and appropriated fund civilians account for 2,074 jobs. Other civilians, including non-appropriated fund civilians, BX/commissary employees, branch bank/credit union employees and other concessionaires, account for the remaining 1,037 jobs. Additional private contracted personnel may contribute to total base employment. Economic activity generated by Langley AFB supports an estimated 6,195 indirect jobs in the region, with an average annual earnings impact of $185 million.

Table 3-10. Employment by Industry (2002)

	Hampton	*Newport News*	*Poquoson*	*York County*	*ROI*
Natural Resources & Mining	0	1	*	28	29
Construction	2,487	3,707	172	2,076	8,442
Trade	9,517	11,891	351	2,642	24,401
Transportation & Utilities	576	2,385	*	215	3,176
Manufacturing	4,407	22,277	14	680	27,378
Information	2,171	2,200	0	101	4,472
Financial	1,805	3,608	77	632	6,122
Services	22,707	32,112	601	6,978	62,398
Government	15,278	17,373	505	3,763	36,919
Total Employment	**58,948**	**95,555**	**1,745**	**17,116**	**173,364**

Notes: * Denotes non-disclosed data.
Source: VEDP 2004.

INCOME AND EXPENDITURES

Earnings in the ROI totaled approximately $7 billion in 2002 (BEA 2004). The distribution of earnings across industries is essentially the same as the distribution of employment, with services and government representing the largest income producers. Earnings per job ranged

from $24,345 in York County to $36,991 in Newport News, with average earnings per job in the ROI of $35,328 (see Table 3-11). Median family income in the ROI in 2000 ranged from $36,597 in Newport News to $60,920 in Poquoson (Census 2000). Per capita income was $19,738, almost 20 percent lower than the state per capita income of $23,975.

Table 3-11. Earnings and Income

	Hampton	*Newport News*	*Poquoson*	*York County*	*ROI*
Median Family Income	$39,532	36,597	60,920	57,956	--
Per Capita Income	19,774	17,843	25,336	24,560	19,738
Earnings per Job	36,991	36,915	--[1]	24,345	35,328
Poverty Rate	11.3	13.8	4.5	3.5	11.1

Notes: 1. Job earnings data for City of Poquoson included in York County.
Source: Census 2000, BEA 2004.

In FY 2002, total payrolls associated with the 11,581 military and federal civilian personnel amounted to $600 million (see Table 3-12). Other expenditures during FY 2002 included $128 million in construction costs, $134 million for service contracts, $7 million in impact aid and tuition assistance, and $9 million in health-related expenditures. Total Langley AFB expenditures in FY 2002 amounted to $1.1 billion.

Table 3-12. Langley AFB Payroll and Expenditures (FY 2002)

	Annual Payroll and Expenditures (in millions)	
	SUBTOTAL	TOTAL
Annual Payroll		$ 599.5
Military	$ 447.9	
AF Civilians	136.1	
NAF and other Civilians	15.5	
Expenditures		$ 538.1
Construction	$ 127.6	
Services	133.6	
Materials, Equipment, Supplies	276.9	
Total Payroll and Expenditures		$ 1,137.6

Source: Air Force 2002A.

INFRASTRUCTURE

Potable Water. Langley AFB's sole potable water source is the Newport News Waterworks. Langley AFB has several non-potable water sources of water that can be used for contingency purposes. Three potable water treatment facilities, Harwood's Mill Water Treatment Plant

(WTP), Lee Hall WTP, and a reverse osmosis well field currently make up the Newport News Waterworks with a maximum production capability of 108 million gallons per day (MGD).

There are four potable water storage tanks available at Langley AFB. Two of these tanks (616 and 1374) are currently in use and the remaining two tanks (66 and 1000) are offline. The total active tank storage capacity of the Langley AFB system is 2.5 million gallons (Air Force 2004). Potable water demand at Langley AFB has varied from 0.90 MGD to 1.20 MGD during the FY 1999 – FY 2000 time frame.

Wastewater Treatment. Wastewater generated at the base is discharged through the sanitary sewer system to the Hampton Roads Sanitation District (HRSD). The base has an HRSD Industrial Wastewater Discharge Permit (No. 0011) effective through 1 October 2006 that regulates the amount of pollutants that can be discharged to the wastewater treatment plant. Wastewater from existing MSA facilities is directed through two pump stations to the main sewer system on base. There are no septic systems at the MSA.

Electric Power and Natural Gas. Electric power is provided to the Back River substation to the base by Dominion Virginia Power. NASA Langley Research Center purchases electricity, which is then sold to Langley AFB. System upgrades would be necessary to support new structures within the MSA. The MSA has one existing 60 kilowatt emergency generator, which is located behind the existing administration building.

Virginia Natural Gas provides natural gas to Langley AFB through an underground main that extends along Sweeney Boulevard. The natural gas system is adequate to meet existing and short-term projected demand. There is no natural gas system currently installed within the MSA.

ENVIRONMENTAL JUSTICE

EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, was issued by the President on February 11, 1994. Objectives of the EO, as it pertains to this document, include identification of disproportionately high and significant health and environmental effects on low-income populations or minority populations that would be caused by a proposed federal action. Accompanying EO 12898 was a Presidential Transmittal Memorandum that referenced existing federal statutes and regulations, including NEPA, to be used in conjunction with EO 12898.

Environmental justice concerns the disproportionate effect of a federal action on low-income or minority populations. The existence of disproportionately high and significant impacts depends on the nature and magnitude of the effects identified for each of the individual resources. If implementation of the proposed action and no-action alternative were to have the potential to significantly affect people, these effects would have to be evaluated for how they adversely or disproportionately affect low-income or minority communities. Because no significant effects occur because of the proposed action or the no-action alternative, neither minority nor low-income groups would be affected disproportionately. Therefore, environmental justice issues were eliminated from further analysis.

4.0 ENVIRONMENTAL CONSEQUENCES

Chapter 4.0 presents the environmental consequences of the proposed action and no-action alternative at Langley AFB for each of the resource areas discussed in Chapter To define the consequences, this chapter evaluates the project elements described in Chapter 2.0 against the affected environment provided in Chapter 3.0. Cumulative effects of the proposed action and no-action alternative with other foreseeable future actions are presented in Chapter 5.0.

4.1 LAND USE

4.1.1 Proposed Action

LAND USE

Implementation of the proposed action with the exception of the new Administrative Support Building and parking lot, would be consistent with the Base General Plan and the Munitions Storage Area, Area Development Plan (Air Force 2004). MSA construction activities would primarily occur within an area that has been cleared and fenced for the past 60 years. Construction for the new Administrative Support Building and parking lot would take in an area that has been either cleared or previously disturbed by landfill activities and is now designated as open space in the Base General Plan. The conversion of this open space immediately adjacent to existing industrial land is not considered a significant impact. This change in land use would be noted as part of an update to the Base General Plan in FY 2005. The proposed action is consistent with surrounding industrial land uses and would be in accordance with the Enforceable Regulatory Programs of the Virginia Coastal Resources Management Program. The existing MSA was constructed in the 1940's at it's current location within 100-feet of lands potentially considered within the Coastal Lands Management Program. This project would, to the maximum extent practicable, not affect these lands by developing facilities within the current fenced boundary and in adjacent areas that were previously disturbed by landfill activities. This project would not have any component that would affect any of the following sections of the Enforceable Regulatory Program: Fisheries Management, Subaqueous Lands Management, Dunes Management, and Shoreline Sanitation as noted below.

Fisheries Management. The development associated with this project would have no significant effect on the conservation and enhancement of finfish and shellfish resources, or on the promotion of commercial and recreational fisheries.

Subaqueous Lands Management. The development of this project would not involve encroachment into, on, or over, state-owned subaqueous lands.

Dunes Management. There are no sand-covered beaches or sand dunes in the vicinity of this project.

Shoreline Sanitation. This project would include interconnections to the base sanitary sewer system. No septic systems, regulated by this program, would be proposed.

TRANSPORTATION

With the implementation of the proposed action, on-base vehicular circulation would not be impeded by the development of the MSA. Construction-related truck traffic may lead to some degradation of base road surfaces and occasional congestion at the base's gates. These adverse effects would be short term and not significant.

VISUAL RESOURCES

Development would occur in an area previously developed. This development, with a consistent architectural design, would benefit the visual resources of the base with no negative effect to the existing visual and natural character of the base.

4.1.2 No-Action Alternative

No impacts to land use, transportation, and visual resources are anticipated under the no-action alternative because the development would not occur and use of existing 40 to 60 year old structures would remain unchanged.

4.2 CULTURAL RESOURCES

A number of federal regulations and guidelines have been established for the management of cultural resources. Section 106 of the National Historic Preservation Act (NHPA), as amended, requires federal agencies to take into account the effects of their undertakings on historic properties. Historic properties are cultural resources that are listed in, or eligible for listing in, the National Register of Historic Places (NRHP). Eligibility evaluation is the process by which resources are assessed relative to NRHP significance criteria for scientific or historic research, for the general public, and for traditional cultural groups. Under federal law, impacts to cultural resources may be considered adverse if the resources have been determined eligible for listing in the NRHP or have traditional significance for American Indian groups.

Analysis of potential impacts to cultural resources considers both direct and indirect impacts. Direct impacts may occur by physically altering, damaging, or destroying all or part of a resource; altering characteristics of the surrounding environment that contribute to the resource's significance; introducing visual or audible elements that are out of character with the property or alter its setting; or neglecting the resource to the extent that it deteriorates or is destroyed. Direct impacts are assessed by identifying the types and locations of proposed activity and determining the exact location of cultural resources that could be affected. Indirect impacts result primarily from the effects of project-induced population increases.

4.2.1 Proposed Action

Impacts to archaeological resources could occur under the proposed action. An area of moderate potential for historic archaeological resources associated with a 19th century farmstead is located between Buildings 1064 and 1066. This area would require subsurface archaeological testing to determine whether intact cultural deposits are present prior to project development. During earlier archaeological investigations in the area it was recommended that all potentially undisturbed areas (those with moderate archaeological potential) should be examined by a

qualified archaeologist before any development or ground disturbing activity takes place. Any survey should be of sufficient intensity to clearly establish the presence or absence of archeological sites (Wheaton et al 1992).

Areas outside of the possible farmstead location are considered to have a low potential for archaeological resources (Wheaton et al. 1992). The Langley AFB *Cultural Resource Management Plan Volume 2* recommends archaeological monitoring during ERP remediation of identified landfills between Gregg Road and Tabb Creek and between the munitions facility and the Langley NASA boundary (Air Force 1998). Compliance with Section 106 of the NHPA, including consultation with the Virginia State Historic Preservation Office (SHPO) regarding the potential for archaeological resources in the area, would be completed prior to project development.

No impacts to traditional resources are likely under the proposed action. No traditional resources have been identified at Langley AFB. There are no federally recognized Indian lands at Langley AFB, and no issues have been identified by federally recognized or other Indian groups in Virginia.

4.2.2 No-Action Alternative

Under the no-action alternative, no development would take place. No impacts to cultural resources would be expected. Resources would continue to be managed in compliance with federal law and Air Force regulations.

4.3 BIOLOGICAL RESOURCES

4.3.1 Proposed Action

Under the proposed action, development would take place in an area that is previously developed or disturbed, currently experiences high levels of continual human activity, lacks native terrestrial habitat, and exhibits a low level of biodiversity. The only plants or animals likely to be displaced from this marginal habitat are individuals of common and locally abundant species. The two osprey nests within the MSA are not expected to be affected by MSA development. Disturbance to forested areas would be minimal. The overall ecological effect would therefore be insignificant.

There would be no significant impacts to wetlands from the implementation of the proposed action since all development would be in areas not delineated as wetlands. The proposed action would not conflict with the wetlands management program associated with the Virginia Coastal Zone Management Program. Standard construction and demolition practices would be applied to control sedimentation and erosion during construction, renovation, and demolition, thereby avoiding secondary effects to any nearby wetlands or freshwater aquatic communities. With the implementation of these practices during development, no significant environmental consequences are anticipated.

Species listed, proposed for listing, or candidates for listing as threatened and endangered in accordance with the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 USC 1531 *et seq.*) are not anticipated to be significantly affected by the proposed action and the no-

action alternative (see Appendix A). State-protected species would also not be significantly affected by the proposed action and the no-action alternative because their habitat would not be altered and because changes in base activities are not expected to be biologically significant. No special species or sensitive habitats are expected to be impacted.

4.3.2 No-Action Alternative

Under the no-action alternative, development of the MSA would not occur. There would be no environmental consequences to this resource.

4.4 WATER RESOURCES

4.4.1 Proposed Action

SURFACE WATER/GROUNDWATER

Development of the MSA would include new impermeable surfaces that would generate additional stormwater runoff. Given the flat, low elevation of the surrounding area, stormwater would be directed to a series of drainage swales following the existing MSA drainage system.

There would be no significant impacts to water resources from point source or non-point sources with implementation of the proposed action. The proposed action would not conflict with point source or non-point source pollution control objectives associated with the Virginia Coastal Zone Management Program. Prior to the start of construction, silt fences, storm drain inlet and outlet protection, and other appropriate standard construction practices would be instituted in accordance with Department of Conservation and Recreation's (DCR's) *Virginia Erosion and Sediment Control Handbook*. Because more than one acre would be disturbed by construction, a Virginia Pollutant Discharge Elimination System (VPDES) Storm Water General Permit would be required.

FLOODPLAINS

Development of the MSA would be within the 100-year floodplain. As identified in Figure 3-2, the majority of Langley AFB is located within the 100-year floodplain and no practicable alternatives are available for this development. In order to reduce the potential for flood damage, all new facilities would be constructed with a first floor elevation at 9 feet MSL. There would be no significant environmental effects to this resource.

4.4.2 No-Action Alternative

Under the no-action alternative, development of the MSA would not occur. There would be no environmental consequences to this resource existing but 40 to 60 year old facilities would be subject to occasional flooding.

4.5 HAZARDOUS MATERIALS AND WASTE MANAGEMENT

4.5.1 Proposed Action

HAZARDOUS MATERIALS

Development of facilities within the MSA may require the use of hazardous materials by contractor personnel. In accordance with the base's HAZMART procedure, copies of Material Safety Data Sheets must be provided to the base and maintained on the construction site. Project contractors would comply with federal, state, and local environmental laws and would employ affirmative procurement practices when economically and technically feasible.

All hazardous materials and construction debris generated by the proposed project would be handled, stored and disposed of in accordance with federal state and local regulations and laws. Permits for handling and disposal of hazardous material are the responsibility of the contractor. Hazardous materials shall not be stored on base. All hazardous materials used at the construction site including, but not limited to, paint, paint thinners, gasoline, diesel, oil and lubricants shall be removed daily. Only quantities of hazardous materials required to carry out the work for the day would be permitted on site. The paint booth currently housed in Facility #1053 (Munitions and Equipment Maintenance) would be relocated to the new Precision Guided Munitions (PGM) shop.

HAZARDOUS WASTE

Contractor personnel may generate hazardous waste during construction. Storage and disposal of these wastes would be the responsibility of the site contractor. Generation of appreciable amounts of hazardous wastes is not anticipated; however, initial accumulation points in buildings 1053, 1067, 1069, and 1077 would be relocated to the new locations associated with hazardous waste generation. Any soil suspected of contamination, as discovered during the construction or demolition process, would be tested and disposed of in accordance with proper regulations.

In the event of fuel spillage during construction, the contractor would be responsible for its containment, cleanup and related disposal costs. The contractor would have sufficient spill supplies readily available on the pumping vehicle and/or at the site to contain any spillage. In the event of a contractor related release, the contractor shall immediately notify the 1 FW Civil Engineering/Environmental Management Office and take appropriate actions to correct its cause and prevent future occurrences.

If asbestos-containing materials (ACM) or lead-based paint are found in or near the demolition areas, then the following Federal and State regulations must be followed.

- *Asbestos Removal and Disposal.* Upon classification as friable or non-friable, all waste ACM should be disposed of in accordance with the Virginia Solid Waste Management Regulations (9 VAC 20-80-640), and transported in accordance with the Virginia regulations governing Transportation of Hazardous Materials (9 VAC 20-110-10 *et seq.*).

- *Lead-Based Paint Removal and Disposal.* The proposed project should comply with the U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) regulations, and with the Virginia Lead-Based Paint Activities Rules and Regulations (9 VAC 20-60-261).

STORAGE TANKS

Above ground storage tanks associated with buildings scheduled for demolition would be disconnected and stored until their use is required. Underground storage tanks currently closed-in-place (1053 and 1075) would be left in their present location until the Air Force determines their need for removal.

The oil-water separator housed in Facility #1067 (Ammunition Maintenance Shop) would be removed prior to the demolition of this facility. A new oil-water separator would be installed into the new Aerospace Ground Equipment (AGE) Storage Facility.

ENVIRONMENTAL RESTORATION PROGRAM

Development of the proposed MSA would occur near ERP Sites LF-11, LF-13, LF-18, SS-24, and OT-64. Construction of the Administrative Support Building and the associated parking lot would occur on the areas designated as ERP sites LF-13 and LF-18. There are two existing monitoring wells associated with ERP site LF-13 within the construction footprint of the Administrative Support Building and parking lot. The base ERP office, 1 CES/CEVR, would request an ACC waiver to construct on or near an ERP site and provide notification to VDEQ and USEPA Region III. Any soil suspected of contamination, as discovered during the development processes, would be tested and disposed of in accordance with proper VDEQ regulations. Disposal of contaminated soil would be funded by this development project.

SOLID WASTE MANAGEMENT

Demolition of the 16 facilities would generate solid wastes consisting of concrete, brick, wood, structural steel, glass, and miscellaneous metal building components. These materials would be generated during a 5-year period from FY 2004 through FY 2008 (Table 4-1).

Table 4-1. Cubic Yards of Solid Waste Expected from MSA Demolition

Fiscal Year	*Cubic Yards of Solid Waste*
FY 2004	1,743
FY 2005	3,407
FY 2006	No demolition scheduled
FY 2007	3,732
FY 2008	12,938

The total amount of demolition waste generated is estimated to be approximately 21,800 cubic yards, with the major portion of that amount being generated in FY 2008. Demolition contractors would be directed to recycle materials to the maximum extent possible, thereby reducing the amount of demolition debris disposed in landfills. Materials not suitable for

recycling would be taken to a landfill permitted to handle construction debris wastes, such as the Bethel Landfill in Hampton. That landfill has capacity to operate for 60 years (personal communication, Deibler 2003) and the waste generated by the proposed action would not have a significant impact to the operating life of the landfill. No significant environmental effects would result from the implementation of the proposed action.

4.5.2 No-Action Alternative

Under the no-action alternative, development of the MSA would not occur. Management of hazardous wastes would continue under existing Langley AFB programs and there would be no environmental consequences to this resource.

4.6 SAFETY

4.6.1 Proposed Action

GROUND SAFETY

Implementation of this action would result in a short-term increase in the risks associated with development; however, no significant environmental consequences are anticipated. Standard development practices guided by OSHA and NFPA regulations would be followed. With the construction of new MSA facilities, substandard structures would be removed from use improving working conditions for MSA personnel.

EXPLOSIVE SAFETY

Implementation of this action would not result in any expansion to the existing quantity-distance (Q-D) explosive safety arcs shown in Figure 3-3. This is a result of the facility siting and engineering design being developed for new facilities. No adverse environmental consequences are anticipated.

4.6.2 No-Action Alternative

Under the no-action alternative, development of the MSA would not take place. Abandoned and aging structures are considered a safety hazard to personnel conducting operations in the MSA and continuing the use of these 40 to 60 year old facilities could increase the potential risk to MSA personnel.

4.7 NOISE

Noise impact analyses typically evaluate potential changes to existing noise environments that would result from implementation of a proposal. Potential changes in the noise environment can be (1) beneficial (i.e., if they reduce the number of sensitive receptors exposed to unacceptable noise levels); (2) negligible (i.e., if the total area exposed to unacceptable noise levels is essentially unchanged); or (3) adverse (i.e., if they result in increased exposure to unacceptable levels).

4.7.1 Proposed Action

Implementation of the proposed action would have minor, temporary increases in localized noise levels in the vicinity of the project area during development. The base is an active military facility that typically experiences high noise levels from daily flight operations. Use of construction and demolition equipment for site preparation and development (i.e., demolition, grading, fill, and construction) would generate noise. However, noise would be similar to typical construction and demolition noise, last only the duration of the specific construction and demolition activities, and could be reduced by the use of equipment sound mufflers and restricting construction and demolition activity to normal working hours (i.e., between 7:00 a.m. and 5:00 p.m.). Table 4-2 shows sound levels associated with typical heavy construction equipment under varying modes of operation.

Table 4-2. Typical Equipment Sound Levels

Equipment	*Sound Level (in dBA) Under Indicated Operational Mode* [1]		
	Idle Power	Full Power	Moving Under Load
Forklift	63	69	91
Backhoe	62	71	77
Dozer	63	74	81
Front-End Loader	60	62	68
Dump Truck	70	71	74

Note: 1. Measured at 125 Feet.
Source: Air Force 1998c

Compared with aircraft noise, noise produced by construction and demolition would be relatively lower in magnitude, and spread out during the business day. Noise from truck traffic hauling construction materials to construction location and demolition materials away from the demolition location and the staging area would not affect base residents because the West Gate would provide development access. The noise disruptions would be temporary and would be limited to daytime hours; therefore, impacts are considered insignificant.

4.7.2 No-Action Alternative

Under the no-action alternative development would not occur. Noise levels would remain the same as they are currently.

4.8 AIR QUALITY

4.8.1 Proposed Action

The air quality analysis included an assessment of direct and indirect emissions from the known activities associated with the proposed action and the no-action alternative at Langley AFB that would affect the regional air quality. The activities identified as requiring evaluation included the development of facilities within the MSA. Emissions from the proposed action and the no-

action alternative are either "presumed to conform" (based on emissions levels that are considered insignificant in the context of overall regional emissions) or they must demonstrate conformity with approved SIP provisions.

Emissions during the development period were quantified to determine the potential impacts on regional air quality. These emissions were compared to federal conformity *de minimis* thresholds for O_3 precursors (volatile organic compounds [VOC] and NO_x). Emissions of VOC, NO_x, CO, and PM_{10} from construction activities were calculated using emission factors from the *Air Emissions Inventory Guidance Document for Mobile Sources at Air Force Installations* (Air Force 2002b) and the California *Environmental Quality Act Air Quality Handbook* (South Coast Air Quality Management District 1993), both of which are compilations of USEPA emission factors. The emission factors included contributions from engine exhaust emissions (i.e., on-site construction equipment, material hauling, and workers' travel), fugitive dust emissions (e.g., from grading and trenching activities). The construction and demolition emissions were calculated over the entire project period, which would extend from FY 2004 through FY 2008. Because actual emissions would be spread over a 5-year period, annual construction and demolition emissions would be less than shown in Table 4-3. The emissions, in tons per construction period, from the proposed action and the no-action alternative are presented in Table 4-1.

Total construction and demolition emissions generated on base and within the Hampton Roads AQCR are less than 1 percent when compared to regional emissions and are below the 100 tons per year *de minimis* federal conformity thresholds for NOx and VOCs. Emissions generated by construction and demolition projects are temporary in nature and would end when construction and demolition are complete. The emissions from fugitive dust (PM_{10}) would be significantly less due to the implementation of control measures in accordance with standard construction and demolition practices. For instance, frequent spraying of water on exposed soil during construction and demolition, proper soil stockpiling methods, and prompt replacement of ground cover or pavement are standard landscaping procedures that could be used to minimize the amount of dust generated during development. The base employs street sweepers to reduce the amount of dirt and debris on the roadways within the base. Using efficient grading practices and avoiding long periods where engines are running at idle could reduce combustion emissions from construction and demolition equipment. Vehicular combustion emissions from construction workers commuting may be reduced by carpooling.

Direct operational emissions are expected as a result of emissions from an additional 118 personnel commuting daily to and from the base and the occasional testing of the new emergency generator. The increase in commuting emissions was calculated assuming an average round trip distance of 18.2 miles for an average daily labor force of 122 traveling individually in a 1995 model-year vehicle. A total of four diesel-fired boilers would be removed during the demolition of Buildings 1053, 1067, 1069, and 1075. Total operational emissions would decrease slightly due to the removal of these boilers. . Also, the Synthetic Minor Operating permit issued by VDEQ requires updating to reflect the change in stationary source emissions. Table 4-3 shows the net increase in operational emissions, which consists of the

increase in commuting emissions, plus emissions from the new emergency generator, minus the emissions that are being eliminated due to the removal of the four boilers. The proposed action and the no-action alternative would not conflict with the air pollution control objectives associated with the Virginia Coastal Management Program.

General conformity regulations set forth in 40 CFR 51 Subpart W, and adopted in the Virginia Administrative Code (9 VAC 5 Chapter 160), outline *de minimis* levels of emissions, below which it is presumed that the action conforms to the SIP. The *de minimis* levels for O_3 precursors in a maintenance area outside of an O_3 transport region (i.e., Hampton Roads AQCR) are 100 tons per year of VOC emissions and 100 tons per year of NO_x. In addition, the proposed action's emissions (both direct and indirect) must be compared to the regional inventory to determine if the emissions are "regionally significant." Emission increases of O_3 precursors (NO_x and VOCs) are well below the threshold thus demonstrating compliance with CAA conformity requirements. In addition, the proposed action and the no-action alternative's emissions, as show in Table 4-3, are well below the regional significance threshold defined by 10 percent of the regional emissions (i.e., 836 tons per year of NO_x and 797 tons per year of VOC).

Table 4-3. Project Emissions – Proposed Action

Criteria Pollutants	*Langley AFB Baseline Emissions (tons per year)*	*Hampton Roads AQCR (tons per year)*	*Temporary Construction & Demolition Emissions (tons)*	*Operational Emissions (tons/year)*
CO	768.09	257,325	5.4	11.1
VOCs	115.18	79,750	1.7	1.8
NO_x	283.38	83,560	24.6	3.8
SO_2	6.47	110,220	< 0.1	< 0.2
PM_{10}	10.29	49,860	1.8	< 0.2

4.8.2 No-Action Alternative

Under the no-action alternative, development of the MSA would not occur. Air quality would remain the same as present conditions.

4.9 SOCIOECONOMICS

4.9.1 Proposed Action

Economic activity associated with the development of the MSA, such as payroll and materials expenditures, would provide short-term economic benefits to the local economy during the projected 4-year period required to complete the project. This impact would comprise less than 0.1 percent of regional employment and earnings. No significant effects to socioeconomic resources would be expected and there would be a slight beneficial increase in regional economic activity.

Interconnections to the existing Langley AFB utility infrastructure are available to support the construction and renovation associated with the MSA. Upgrades would be necessary for the Administrative Support Facility and for new connections to new structures. Consumption of

potable water and electricity and natural gas would increase with the operation of these facilities; however, these demands can be met through the existing and upgraded infrastructure. No adverse environmental consequences are anticipated from the construction and operation of these facilities.

4.9.2 No-Action Alternative

Under the no-action alternative, the MSA would not be constructed and the base munitions requirements would be met utilizing aging and deteriorated equipment and facilities. There would be no significant effects to this resource.

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5.0 CUMULATIVE EFFECTS AND IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

5.1 CUMULATIVE EFFECTS

This section provides (1) a definition of cumulative effects, (2) a description of past, present, and reasonably foreseeable actions relevant to cumulative effects, and (3) an evaluation of cumulative effects potentially resulting from these interactions.

5.1.1 Definition of Cumulative Effects

Council on Environmental Quality (CEQ) regulations stipulate that the cumulative effects analysis within an EA should consider the potential environmental impacts resulting from "the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions" (40 CFR 1508.7). Recent CEQ guidance in *Considering Cumulative Effects* affirms this requirement, stating that the first steps in assessing cumulative effects involve defining the scope of the other actions and their interrelationship with the proposed action and the no-action alternative. The scope must consider geographic and temporal overlaps among the proposed action and the no-action alternative and other actions. It must also evaluate the nature of interactions among these actions.

Cumulative effects are most likely to arise when a relationship or synergism exists between a proposed action and the no-action alternative and other actions expected to occur in a similar location or during a similar time period. Actions overlapping with, or in close proximity to, the proposed action and the no-action alternative would be expected to have more potential for a relationship than actions that may be geographically separated. Similarly, actions that coincide, even partially, in time would tend to offer a higher potential for cumulative effects.

To identify cumulative effects, this EA addresses three questions:

1. Does a relationship exist such that elements of the proposed action and the no-action alternative might interact with elements of past, present, or reasonably foreseeable actions?
2. If one or more of the elements of the proposed action and the no-action alternative and another action could be expected to interact, would the proposed action and the no-action alternative affect or be affected by impacts of the other action?
3. If such a relationship exists, does an assessment reveal any potentially significant impacts not identified when the proposed action and the no-action alternative is considered alone?

In this EA, an effort has been made to identify all actions that are being considered and that are in the planning phase at this time. To the extent that details regarding such actions exist and the actions have a potential to interact with the proposed action and the no-action alternative in

this EA, these actions are included in this cumulative analysis. This approach enables decisionmakers to have the most current information available so that they can evaluate the environmental consequences of the proposed action and the no-action alternative.

5.1.2 Past, Present, and Reasonably Foreseeable Actions

This EA applies a stepped approach to provide decisionmakers with not only the cumulative effects of the proposed action and the no-action alternative, but also the incremental contribution of past, present, and reasonably foreseeable actions.

PAST AND PRESENT ACTIONS RELEVANT TO THE PROPOSED ACTION AND THE NO-ACTION ALTERNATIVE

Langley AFB is an active military installation that undergoes continuous change in mission and in training requirements. This process of change is consistent with the U.S. defense policy that the Air Force must be ready to respond to threats to American interests throughout the world. In 1998, the Air Force implemented a force structure change that added 12 F-15C aircraft and 134 personnel to Langley AFB, increasing the total number of F-15C aircraft to 66. In 2001 Langley AFB was chosen as the beddown location of the Initial Operational Wing of 72 new F/A-22 aircraft. To support this beddown, various projects, including demolition and construction of three hangers, a new simulator building, and other support buildings have been constructed or are under construction. Approximately 16 acres of the base along the flightline are under development to support the beddown.

The base, like any other major installation, also requires occasional new construction, facility improvements, and infrastructure upgrades. The base has been in operation since 1917 and many facilities have outlived their useful life and require extensive renovation or demolition. Demolition of the Langley Tow Tank (720) was completed in 2003. Langley AFB is currently upgrading portions of its water, storm water drainage system, and electrical system and renovating the old Shopette (442). Also under construction in 2004 is a new operations support center, housing management office, dormitory complex, reconstruction of the King Street Gate, and a new outdoor running track.

REASONABLY FORESEEABLE FUTURE ACTIONS

During the FY 05 to FY 08 timeframe, Langley AFB has proposed a number of actions that are independent of the proposed action and would be implemented irrespective of a decision on the proposed development at the existing MSA. In order to redevelop portions of the base and to eliminate facilities that are obsolete, the base is considering demolition of various buildings throughout the base. These buildings include Bayview Towers (945), Seaplane Hanger (633), Greenhouse (1001), Dock (610), LTA single-family housing units (868, 869, 948, 949) and industrial buildings 80, 615, 731, 732, 735, 1033. The base is also planning to construct a new building to house the Air Force Command and Control, Intelligence, Surveillance, Reconnaissance Center.

Planned community support construction includes a new youth center, visitors' quarters, expansion of the hospital and construction of a new Army & Air Force Exchange Service mini-

mall, redevelopment of the marina, reconstruction of the LaSalle and West gates, including widening of a portion of Sweeney Boulevard. The base is also planning a series of infrastructure improvements that include an expansion to the alert area, replacement of the existing 2-million gallon per day (MGD) potable water storage tank, relocation of the government gas station and construction of a Combined Arms Training Range.

5.1.3 Analysis of Cumulative Impacts

The following analysis examines how the impacts of these other actions might be affected by those resulting from the proposed action at Langley AFB and whether such a relationship would result in potentially significant impacts not identified when the proposed action is considered alone.

The beddown of the Initial Operational Wing of F/A-22 aircraft has been analyzed in an Environmental Impact Statement (Air Force 2001b). Construction at Langley AFB would impact the architectural and visual aspects of the Langley Historic District. Given that the proposed F/A-22 construction would have a minimal effect on noise, air quality, and traffic, the combined environmental consequences of these actions would remain well below the threshold of significance for these resources.

None of the future infrastructure actions (analyzed in separate environmental documents) would be expected to result in more than negligible impacts either individually or cumulatively. All actions affect very specific, circumscribed areas, and the magnitude of the actions is minimal. Given that the proposed action would likewise have a minimal effect within the base, the combined impacts of these actions would remain well below the threshold of significance for any resource category.

5.2 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

NEPA requires that environmental analysis include identification of ". . . any irreversible and irretrievable commitments of resources which would be involved in the proposed action and no-action alternative should it be implemented." Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that the uses of these resources have on future generations. Irreversible effects primarily result from the use or destruction of a specific resource (e.g., energy and minerals) that cannot be replaced within a reasonable time frame. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action (e.g., extinction of a threatened or endangered species or the demolition of a historic building).

For the proposed action, any potential environmental consequences would be short-term and temporary, or longer lasting, but negligible. Training operations would continue and involve consumption of nonrenewable resources, such as fuel used in vehicles. None of these activities would be expected to significantly decrease the availability of minerals or petroleum resources. Personal vehicle use by the personnel continuing to support the existing mission would consume water, fuel, oil, and lubricants. The proposed action would increase their use, but would not significantly affect the availability of the resources.

Construction would occur on previously disturbed areas. Minimal impacts would result on vegetation; however the impacts are not irreversible or irretrievable. While construction of new facilities would incur soil disturbance, use of common construction practices and grading would localize and minimize soil loss. No additional impacts on cultural or archaeological resources would result.

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PERSONS AND AGENCIES CONTACTED

Baie, Laura, 2004. Community Planner, 1 CES/CECP, Langley Air Force Base, Virginia.

Deibler, Jeff, 2003. Virginia Department of Environmental Quality, Solid Waste Management, Richmond, Virginia.

Green, Paul PhD, 2004. Cultural Resources Manager, ACC/CEVPN, Langley Air Force Base, Virginia.

Hailey, Kathi, 2004. Hazardous Waste Manager, 1 CES/CEVC, Langley Air Force Base, Virginia.

Johnston, Vic, 2004. Public Affairs, 1 FW/PA, Langley Air Force Base, Virginia.

Munro, SMSgt. Daniel, 2004. 1 EMS/MXMWP, Langley Air Force Base, Virginia.

Patterson, Margaret, 2004. Restoration Project Manager, ACC/CEVRE, Langley Air Force Base, Virginia.

Tice, John, 2004. Environmental Restoration Program Manager, 1 CES/CEVR, Langley Air Force Base, Virginia.

Wittkamp, Thomas. 2003. EIAP Manager, 1 CES/CEVA, Langley Air Force Base, Virginia.

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APPENDIX A - CONSULTATION LETTERS

Science Applications International Corporation
An Employee-Owned Company

14 April 2004

U.S. Fish and Wildlife Service
Virginia Field Office
6669 Short Lane
P.O. Box 99
Gloucester, VA 23061

Dear Sirs:

The U.S. Air Force is preparing an Environmental Assessment (EA) to evaluate potential environmental impacts from new development associated with the existing Munitions Storage Area (MSA) at Langley Air Force Base. In addition to evaluating the construction and demolition associated with the proposed action, the EA will include an analysis of the no-action alternative.

This action would include construction of 13 new facilities, renovation of 4 existing facilities, and demolition of 14 existing facilities. All construction, renovation, and demolition will be located within the main portion of the base, in an area that has been previously disturbed as shown on the attached figure (Attachment 1).

Pursuant to the Endangered Species Act and the National Environmental Policy Act, we must consider potential impacts of the proposed action to federal and state listed threatened, endangered, candidate and proposed to be listed species that occur or may occur in the potentially affected area. We have received species information from various federal and state offices recently and would like to confirm these lists (see Attachment 2) with your office. Please provide your response to: SAIC, Construction of the Munitions Storage Area (MSA) EA-Sherwood, 22 Enterprise Parkway, Suite 200, Hampton, VA 23666. Until the extent of the potential impact to listed species is determined, we will make no decision regarding the need for a section 7 consultation.

Sincerely,

Science Applications International Corporation

David Dischner
Project Manager

Attachments:
1. Project Location Maps
2. Threatened and Endangered Species List

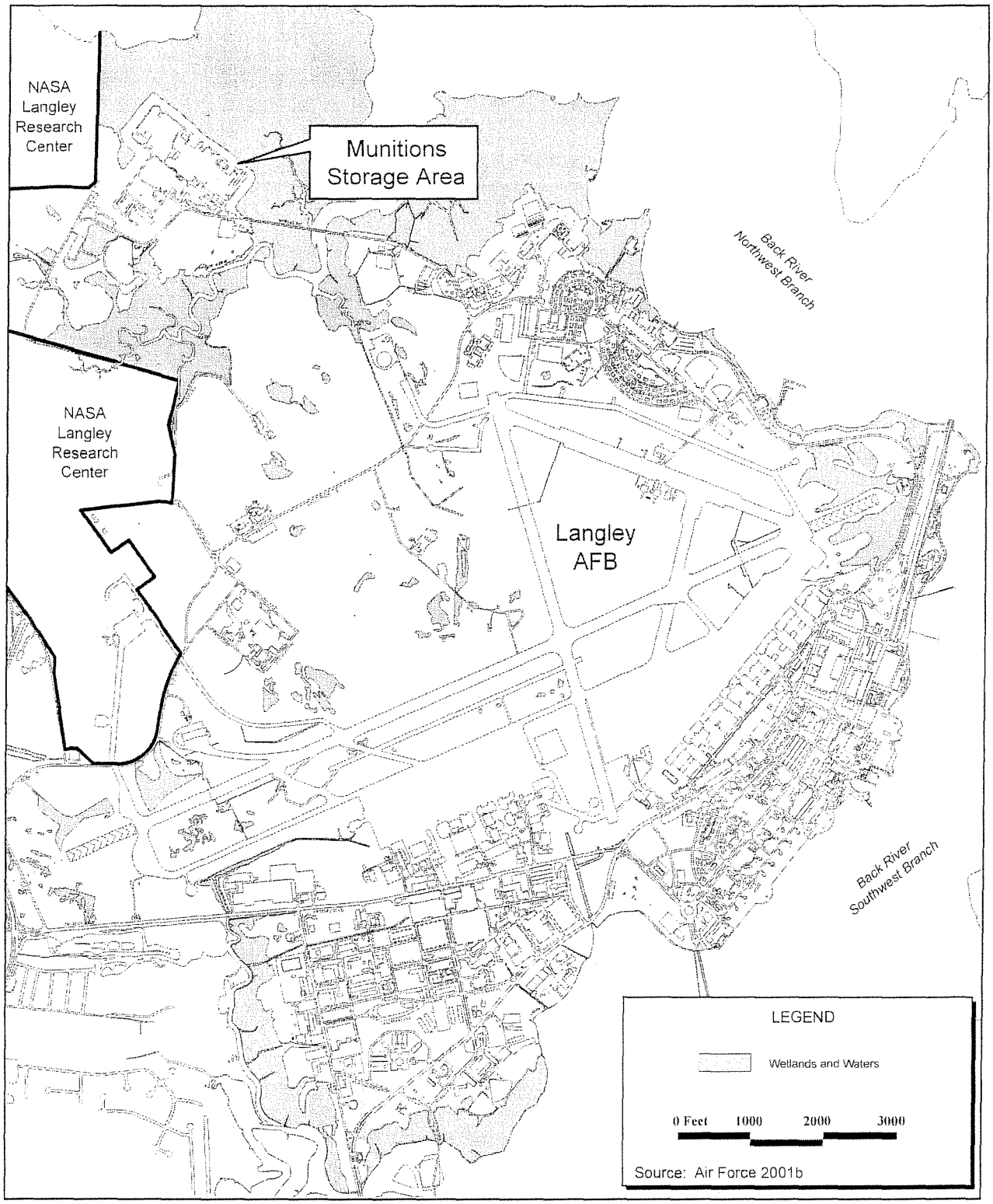

Figure 2-1

Langley AFB
Location of Munitions Storage Area (MSA)

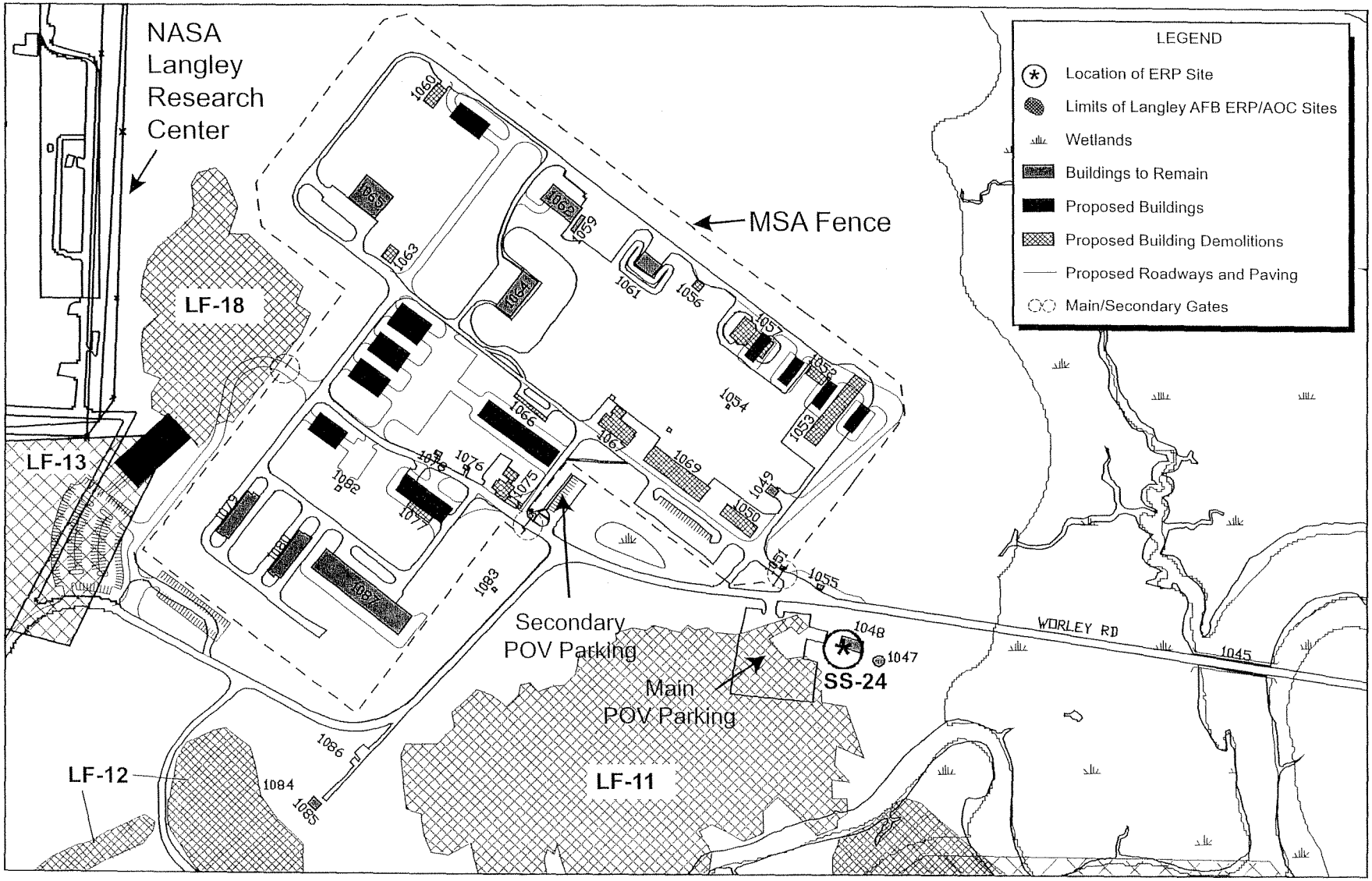

Figure 2-4

Langley AFB
Proposed Munitions Storage Area (MSA)

Table 3-1. Threatened, Endangered, and Special-Status Species/ Communities that Occur or Potentially Occur on Langley AFB

Species	*Status*	*Areas of Occurrence*
Plants		
Harper's fimbristylis *Fimbristylis perpusill*	SE	Coastal seasonal ponds.
Virginia least trillium *Trillium pusillum var. virginianum*	FSC	Forested wetlands and mesic woods including the "green sea" wetlands. Recorded from the City of Hampton.
Invertebrates		
Northeastern beach tiger beetle *Cicindela dorsalis dorsalis*	FT	Broad beaches with well-developed sand dunes.
Amphibians		
Barking treefrog *Hyla gratiosa*	ST	Breeds in coastal seasonal fish-free freshwater ponds. Base at northern edge of range. Spends warm months in treetops, seeks moisture during dry periods by burrowing among tree roots and clumps of vegetation.
Mabee's salamander *Ambystoma mabeei*	ST	Breeds in coastal seasonal freshwater ponds. Needs fish-free breeding habitat. Tupelo and cypress bottoms in pine woods, open fields, and lowland deciduous forest.
Northern diamond-backed terrapin *Malaclemys terrapin terrapin*	FSC	Prefers the brackish water of estuaries, tidal marshes, and the tidal portions of rivers. It is sometimes seen in the Atlantic Ocean. Nesting occurs on sandy beaches or dunes.
Reptiles		
Canebrake rattlesnake *Crotalus horridus atricaudatus*	SE	Meadows, canebrake or "green sea" wetlands. At risk because of wetland loss. Swampy areas, canebrake thickets, and floodplains.
Birds		
Bald eagle *Haliaeetus leucocephalus*	FT/SE	Forages occasionally on base. Nests within three miles of the base.
Foster's tern *Sterna forsteri*	SSC	Coastal and marshland bird that fishes the waters of the region.
Glossy ibis *Plegadis falcinellus*	SSC	Wades in marshes and fishes the waters of the region.
Great egret *Asmerodius albus*	SC	Palustrine and estuarine wetlands; marshes.
Night-heron yellow-crowned *Nyctanassa violacea violacea*	SSC	Wades in marshes and fishes the waters of the region.
Northern harrier *Circus cyaneus*	SSC	Hunts over marshes and fields and is known to nest in the area.
Least tern *Sterna antillarum*	SSC	Found feeding or nesting on beaches in the area.
Peregrine falcon *Falco peregrinus*	SE	Observed foraging over salt marshes on base. Open wetlands near cliffs.
Piping plover *Charadrius melodius*	FT/ST	Prefers areas with expansive sand or mudflats (for foraging) in close proximity to a sand beach (for roosting). Fifty-two designated critical habitat units from North Carolina south to northern Florida along mainland beaches and barrier islands.

Notes: FSC = Federal Species of Concern
FT = Federal Threatened
SC = State Candidate
SE = State Endangered
SSC= State Special Concern
ST = State Threatened

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DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 629 East Main Street, Richmond, Virginia 23219
Mailing address: P.O. Box 10009, Richmond, Virginia 23240
Fax (804) 698-4500 TDD (804) 698-4021
www.deq.state.va.us

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

Robert G. Burnley
Director

(804) 698-4000
1-800-592-5482

August 12, 2004

Mr. Kenneth H. Walker
Chief, Environmental Management Flight
1 CES/CEV
37 Sweeney Boulevard
Langley AFB, Virginia 23665-2107

RE: Environmental Assessment and Consistency Determination for the Munitions Storage Area at Langley Air Force Base, Virginia (DEQ # 04-130F).

Dear Mr. Walker:

The Commonwealth of Virginia has completed its review of the Environmental Assessment (EA) and consistency determination for the above-referenced project. The Department of Environmental Quality (DEQ) is responsible for coordinating Virginia's review of federal environmental documents and responding to appropriate federal officials on behalf of the Commonwealth. Also, as you are aware, pursuant to the Coastal Zone Management Act of 1972, as amended, federal actions that can have foreseeable effects on Virginia's coastal uses or resources must be conducted in a manner which is consistent with the VCP, to the maximum extent practicable. DEQ, as the lead agency for the VCP, is responsible for coordinating Virginia's review of federal consistency determinations and certifications. The following agencies participated in the review of this consistency determination:

Department of Environmental Quality
Department of Game and Inland Fisheries
Department of Conservation and Recreation
Department of Agriculture and Consumer Service
Department of Health

The Department of Historic Resources, the Hampton Roads Planning District Commission and the City of Hampton were also invited to comment.

Project Description

The U.S. Air Force proposes to demolish 16 buildings, renovate 4 existing facilities, and construct 13 new facilities at the Munitions Storage Area, Langley Air Force Base, Hampton, Virginia. New facility construction at the Munitions Storage Area would include a total of 82,820 square feet of new building space, 191 new parking spaces and approximately 1,300 feet of 25-foot wide driveways and internal roads. The proposed renovation projects would add a

total of 24,423 square feet of additional building space. The Munitions Storage Area is currently designated as industrial lands.

Environmental Impacts and Mitigation

1. Wetlands and Water Quality. The Draft EA (page 4-3) states that no wetlands would be impacted by the proposed project since the proposed actions would occur in areas that have been previously developed or disturbed. The EA (page 3-5) states that a wetland delineation of the entire base was conducted in 2000. The wetlands identified during the delineation are currently under jurisdictional determination review by the U.S. Army Corps of Engineers. The DEQ-Tidewater Regional Office states that confirmation of the delineation is a requisite part of any definitive wetland regulatory decision and the Air Force should seek final confirmation of this delineation prior to work in or near wetlands. Provided that the confirmation of the delineation supports the absence of wetland impacts, none of the proposed activities would require further review or authorization under the Virginia Water Protection Permit program and regulations.

However, if wetlands will be affected, the project must comply with Section 404(b)(1) guidelines of the Clean Water Act and with the Commonwealth's wetland laws and regulations. Both Federal and State guidelines recommend avoidance and minimization of wetlands impacts as the first steps in the mitigation process. Any unavoidable impacts to State waters may require compensation such as wetland creation, restoration or other acceptable forms of wetland compensatory mitigation. For unavoidable impacts, DEQ encourages the following practices to minimize the impacts to wetlands and waterways:

- Operate machinery and construction vehicles outside of stream-beds and wetlands; use synthetic mats when in-stream work is unavoidable.
- Preserve the top 12 inches of material removed from wetlands for use as wetland seed and root-stock in the excavated area.
- Erosion and sedimentation controls should be designed in accordance with the most current edition of the Virginia Erosion and Sediment Control Handbook. These controls should be in place prior to clearing and grading, and maintained in good working order to minimize impacts to State waters. The controls should remain in place until the area is stabilized.
- Place heavy equipment, located in temporarily impacted wetland areas, on mats, geotextile fabric, or use other suitable measures to minimize soil disturbance, to the maximum extent practicable.
- Restore all temporarily disturbed wetland areas to pre-construction conditions and plant or seed with appropriate wetlands vegetation in accordance with the cover type (emergent, scrub-shrub, or forested). The Applicant should take all appropriate measures to promote re-vegetation of these areas. Stabilization and restoration efforts should occur immediately after the temporary disturbance of each wetland area instead of waiting until the entire project has been completed.
- Place all materials which are temporarily stockpiled in wetlands, designated for use for the immediate stabilization of wetlands, on mats, geotextile fabric in order to prevent entry of materials into State waters. These materials should be managed in a manner that prevents leachates from entering state waters and must be entirely removed within thirty days

following completion of that construction activity. The disturbed areas should be returned to their original contours, stabilized within thirty days following removal of the stockpile, and restored to the original vegetated state.

2. Air Quality. During construction fugitive dust must be kept at a minimum by using control methods outlined in 9 VAC 5-50-60 *et seq.* of the Regulations for the Control and Abatement of Air Pollution. These precautions include, but are not limited to, the following:

- Use, where possible, of water or chemicals for dust control;
- Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials;
- Covering of open equipment for conveying materials; and
- Prompt removal of spilled or tracked dirt or other materials from paved streets and removal of dried sediments resulting from soil erosion.

Furthermore, if project activities include the burning of demolition or construction material, this activity must meet the requirements under 9 VAC 5-40-5600 *et seq.*, for open burning. Whereas, the regulation provides for, but does not require, the local adoption of a model ordinance concerning open burning, the applicant should contact officials from the City of Hampton to determine what local requirements, if any, exist. Some applicable provisions of the regulation include, but are not limited to:

- All reasonable effort shall be made to minimize the amount of material burned, with the number and size of the debris piles;
- The material to be burned shall consist of brush, stumps and similar debris waste and clean burning demolition material;
- The burning shall be at least 500 feet from any occupied building unless the occupants have given prior permission, other than a building located on the property on which the burning is conducted;
- The burning shall be conducted at the greatest distance practicable from highways and air fields,
- The burning shall be attended at all times and conducted to ensure the best possible combustion with a minimum of smoke being produced;
- The burning shall not be allowed to smolder beyond the minimum period of time necessary for the destruction of the materials; and
- The burning shall be conducted only when the prevailing winds are away from any city, town or built-up area.

Also, this project is located in an ozone nonattainment area. Therefore, the Air Force must take all precautionary measures to reduce ground-level ozone concentrations. This can be done by minimizing the generation of ozone precursors such as volatile organic compounds and nitrogen oxides during operation of construction equipment and vehicles.

In addition, the DEQ-Tidewater Regional Office states that Langley Air Force Base is currently permitted under a synthetic minor permit. Langley Air Force Base should provide the DEQ-

Tidewater Regional Office with all information related to the removal of any emission units at Langley. Units include, but are not limited to, boilers, generators and tanks. Furthermore, if construction of the new facility includes the addition of boilers, emergency generators and other sources of air emission, an air permit may be required. Please contact the DEQ-Tidewater Regional Office at (757) 518-2000 for additional information.

3. Chesapeake Bay Preservation Area. The EA does not address the Coastal Lands Management Enforceable Policy of the VCP. While the Department of Conservation and Recreation's Division of Chesapeake Bay Local Assistance (DCBLA) concurs with the Air Force that Chesapeake Bay Preservation Areas are not locally designated on federal lands, this does not relieve the Air Force of its responsibilities to be consistent with the enforceable policies of the VCP which include the provisions of the Chesapeake Bay Preservation Area Designation and Management Regulations (Regulations). Therefore, the proposed project should to be consistent, to the maximum extent practicable, with the performance criteria of the Regulations on lands analogous to locally designated Chesapeake Bay Preservation Areas. These areas include: tidal wetlands, non-tidal wetlands connected by surface flow and contiguous to tidal wetlands or tributary streams, tidal shores and a 100-foot vegetated buffer area located adjacent to and landward of the aforementioned features. Less stringent performance criteria apply to lands that are contiguous to the 100-foot buffer for a distance of 100 feet landward. For more information, contact Alice Baird of the Department of Conservation and Recreation's DCBLA at (804) 225-2307.

In addition, the 1998 Federal Agencies' Chesapeake Ecosystem Unified Plan requires the signatories, including the Air Force, to fully cooperate with local and state governments in carrying out voluntary and mandatory actions to comply with the management of stormwater. The agencies also committed to encouraging construction design that a) minimizes natural area loss on new and rehabilitated federal facilities; b) adopts low impact development and best management technologies for stormwater, sediment and erosion control and reduces impervious surfaces; and c) considers the Conservation Landscaping and Bay-Scapes Guide for Federal Land Managers. Also, the Chesapeake 2000 Agreement committed government agencies to a number of sound land-use and stormwater quality controls. The signatories additionally committed the agencies to lead by example with respect to controlling nutrient, sediment and chemical contaminant runoff from government properties. In December 2001, the Executive Council of the Chesapeake Bay Program issued Directive No. 01-1, Managing Storm Water on State, Federal and District-owned Lands and Facilities, which includes specific commitments for agencies to lead by example with respect to stormwater control. For more information, contact Alice Baird of CBLAD at (804) 225-2307.

4. Natural Heritage Resources. The Department of Conservation and Recreation has searched its Biotics Data System (BDS) for occurrences of natural heritage resources from the areas outlined on the submitted map. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations. While the BDS documents the presence of natural heritage resources in the project area, due to the scope of the activity and the distance to the resource, DCR does not anticipate that this project will adversely impact these natural heritage resources.

Also, pursuant to the Memorandum of Agreement established between DCR and the Virginia Department of Agriculture and Consumer Services (VDACS), DCR has the authority to report for VDACS on state-listed plant and insect species. The current activity will not affect any documented state-listed plant or insect species under the jurisdiction of VDACS. VDACS does not anticipate that the project will have significant adverse effect as it relates to their responsibilities for the preservation of agricultural lands and the protection of listed endangered and threatened plant and insect species. Please contact DCR's Division of Natural Heritage at (804) 786-7951 if a significant amount of time passes before the project is implemented.

5. Wildlife Resources. Under title 29.1 of the Code of Virginia, the Department of Game and Inland Fisheries (DGIF) is the primary wildlife and freshwater fish management agency in the Commonwealth. DGIF has full law enforcement and regulatory jurisdiction over all wildlife resources, inclusive of state and federally endangered or threatened species, but excluding listed insects. The DGIF states that they do not anticipate adverse impacts on resources under their jurisdiction as a result of the proposed project.

6. Non-point Source Pollution Control. The EA (page 4-3) states that standard construction and demolition practices would be applied to control sedimentation and erosion during project activities. DEQ encourages strict adherence to appropriate erosion and sediment control measures and recommends that construction activities be monitored to ensure that erosion and stormwater management practices are adequately preventing sediment and pollutant migration into nearby surface waters, including wetlands.

7. Solid and Hazardous Wastes. The DEQ-Waste Division states that solid and hazardous waste issues and sites were addressed to some extent in the Draft EA. The DEQ-Waste Division conducted a cursory review of its data files and found that Langley Air Force Base is part of DEQ's Federal Facilities Installation Restoration Program (VA2800005033), a Formerly Used Defense Site (VA9799F8457) and that Bethel Manor Housing is a Resource Conservation and Recovery Act (RCRA) small quantity generator of hazardous waste (VAD988222527). The following websites may prove helpful in locating additional information for these sites: http://www.epa.gov/echo/search_by_permit.html or http://www.epa.gov/enviro/html/rcris/rcris_query_java.html.

The EA states (page 4-5) that contractor personnel may generate hazardous waste during construction and that this waste might be located on site after construction. The DEQ-Waste Division states that Federal and State regulations that address hazardous waste/materials must be followed if the hazardous waste is to be located on site after construction is completed. The DEQ-Tidewater Regional Office also states that the handling, storage, and disposal of hazardous materials and hazardous waste may be the responsibility of the Air Force. Specifically, hazardous wastes generated at the present site of the paint booth must be handles in accordance with applicable regulations when the paint booth is relocated. The Air Force should contact the DEQ-Tidewater Regional Office regarding all closures and all new hazardous waste accumulation areas established as a result of this project. Finally, the Air Force should contact Mr. Ken Parker of Langley Air Force Base to discuss hazardous material and waste issues.

In addition, Langley Air Force Base is on the National Priorities List and the Munitions Storage Area is on or adjacent to five Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Environmental Restoration Program (ERP) Sites. Two sites (LF-13 and LF-18) appear to be in the path of the proposed construction for the Administrative Support Building and parking lot. Site SS-24 lies beneath a building that is to remain in place. No other buildings to be constructed or demolished are on top of ERP sites. However, these three sites have remedies in place that are protective of human health and the environment (see attached letter for remedies). Therefore, the DEQ-Federal Facilities Restoration Program recommends that the Air Force contact Mr. John Tice, Langley Air Force Base Environmental Restoration, for more information regarding CERCLA obligations and the ERP Sites (see "Regulatory and Coordination Needs," item # 4, below).

8. Wild and Scenic Rivers. The Department of Conservation and Recreation states that impacts to state scenic, state recreational facilities or state natural area preserves under their jurisdiction are not anticipated.

9. Historic Structures and Archaeological Resources. The EA (page 4-2) states that the proposed project may impact archaeological resources. An area of moderate potential for historic archaeological resources associated with the 19th century farmstead is located between Buildings 1064 and 1066. This area would require subsurface archaeological testing prior to construction. Areas outside of the possible farmstead location are considered to have a low potential for archaeological resources. In addition, the Langley *Cultural Resource Management Plan, Volume 2* recommends archaeological monitoring during ERP remediation of identified landfills between Gregg Road and Tabb Creek and between the munitions facility and the Langley NASA boundary. The EA states (page 4-3) that prior to construction, the Air Force would consult with the Virginia State Historic Preservation Office pursuant to *Section 106 of the National Historic Preservation Act* regarding the potential for archaeological resources in the proposed project area (see "Regulatory and Coordination Needs," item # 5 below).

10. Above-ground and Under-ground Storage Tanks. The DEQ-Tidewater Regional Office states that there are two, closed fuel oil under-ground storage tanks (UST) in the proposed project area. Although not subject to Virginia UST Regulations II, III, IV and VII, the Air Force should be aware of the potential to encounter these tanks during excavation. Any release of product to the environment from these tanks during project activities is subject to the reporting requirements of State Water Control Law, Article 11. In addition, three petroleum releases have occurred in the Munitions Storage Area. Although these cases have been closed (PC # 1995-2363 at Building 1053, PC # 1998-2240 at Building 1075 and PC # 1998-2223 at Building 1077), any new petroleum releases should be reported to the DEQ-Tidewater Regional Office (see "Regulatory and Coordination Needs," item # 6 below).

Also, the proposed project area contains a number of small, above-ground storage tanks (AST) that are not subject to the Virginia AST Regulation due to their size. Therefore, they can be disconnected and placed in storage or moved without regulatory requirements for closure, notification or registration.

11. Pollution Prevention. The Department of Environmental Quality advocates that principles of pollution prevention be used in all construction projects as well as in facility maintenance, which includes the reduction of solid waste at the source and the use of recycled materials. DEQ has some recommendations regarding pollution prevention:

- Consider development of an effective Environmental Management System (EMS). An effective EMS will ensure that the proposed facility is committed to minimizing its environmental impacts, setting environmental goals, and achieving improvements in its environmental performance. DEQ offers EMS development assistance and recognizes facilities with effective EMS through its Virginia Environmental Excellence Program.
- Consider environmental attributes when purchasing materials. For example, the extent of recycled material content, toxicity level, and amount of packaging should be considered.
- Consider contractors' commitments to the environment when choosing contractors. Also, specifications regarding raw material selection (alternative fuels and energy sources) and construction practices can be included in contract documents and requests for proposals.
- Choose sustainable practices and materials in infrastructure and building construction and design. These could include asphalt and concrete containing recycled materials and integrated pest management in landscaping.
- Integrate pollution prevention techniques into the facility maintenance and operation to include the following: product substitution (use of low toxic cleaners) and source reduction (fixing leaks, energy efficient products).

Pollution prevention measures are likely to minimize chemical exposure to employees, reduce potential environmental impacts, and reduce costs for material purchasing and waste disposal. For more information, contact DEQ's Office of Pollution Prevention, Mr. Tom Griffin at (804) 698-4545.

Regulatory and Coordination Needs

1. Water Quality and Wetlands. Since the project impacts 1 or more acres of land, a Virginia Pollutant Discharge Elimination System Stormwater general permit is required. For more information, contact the DEQ-Tidewater Regional Office. Also, if wetlands are to be impacted by the proposed project, contact the DEQ-Tidewater Regional Office for more information regarding permitting requirements under the Virginia Water Protection Program. The DEQ-Tidewater Regional Office can be contacted at (757) 518-2000.

2. Erosion and Sediment Control. Federal agencies and their authorized agents conducting regulated land disturbing activities on private and public lands in the state must comply with the Virginia Erosion and Sediment Control Law and Regulations (VESCL&R), Virginia Stormwater Management Law and Regulations (VSWML&R), and other applicable federal nonpoint source pollution mandates (e.g., Clean Water Act-Section 313, Federal Consistency under the Coastal Zone Management Act). Activities that disturb 2,500 square feet or more in a Chesapeake Bay

Preservation Area would be regulated by VESCL&R and those that disturb one acre or greater would be covered by VSWML&R. These activities include clearing and grading activities, installation of staging areas, parking lots, roads, buildings, utilities, or other structures, soil/dredge spoil areas, or related land conversion. Accordingly, the Air Force should prepare and implement erosion and sediment control (ESC) and stormwater management (SWM) plans to ensure compliance with state law. The Air Force is ultimately responsible for achieving project compliance through oversight of on site contractors, regular field inspection, prompt action against non-compliant sites, and/or other mechanisms consistent with agency policy. DCR encourages the Air Force to contact the DCR's Chowan, Albemarle & Coastal Watershed Office at (757) 925-2468 for more information.

3. Air Quality Regulations. This project may be subject to regulation by the DEQ. The following sections of Virginia Administrative Code may be applicable: 9 VAC 5-50-60 *et seq.* governing fugitive dust emissions, 9 VAC 5-40-5600 *et seq.* addressing open burning and 9 VAC 5-40-5490 *et seq.* addressing cut-back asphalt usage restrictions. In addition, the facility may need air permits for any boilers, emergency generators and other new sources of air emissions. For additional information, please contact the DEQ-Tidewater Regional Office at (757) 518-2000.

4. Solid and Hazardous Waste. The Air Force should contact Mr. John Tice, Langley Air Force Base Environmental Restoration (telephone, (757) 764-1086), prior to beginning any land, sediment, or ground water disturbing activities to ensure all current remedies remain intact and long-term monitoring wells are not disturbed during demolition or construction.

In addition, any soil that is suspected of contamination that is encountered during demolition or construction must be tested and disposed of in accordance with applicable federal, state and local laws and regulations. Should contamination be discovered, please contact the Tidewater Regional Office of the DEQ. Also, all solid waste, hazardous waste, and hazardous materials must be managed in accordance with all applicable federal, state, and local environmental regulations. The following state regulations may be applicable: Virginia Waste Management Act, Code of Virginia Sections 10.1-1400 *et seq.*; Virginia Hazardous Waste Management Regulations (9VAC 20-60); Virginia Solid Waste Management Regulations (9VAC 20-80) and Virginia Regulations for the Transportation of Hazardous Materials (9VAC 20-110). Some of the applicable Federal regulations are the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Section 6901 *et seq.* and the applicable regulations contained in Title 40 of the Code of Federal Regulations; and the U.S. Department of Transportation Rules for Transportation of Hazardous Materials, 49 CFR Parts 107, 171.1-172.558. Contact DEQ-Tidewater Regional Office at (757) 518-2000 concerning the location and availability of suitable waste management facilities in the project area or if free product, discolored soils, or other evidence of contaminated soils are encountered.

As stated in the EA (page 4-5), the structures to be demolished must be checked for asbestos containing materials (ACM) and/or lead-based paint (LBP). If either is found, then the following Federal and State regulations must be followed.

(a) Asbestos Removal and Disposal. Upon classification as friable or non-friable, all waste ACM should be disposed of in accordance with the Virginia Solid Waste Management Regulations (9 VAC 20-80-640), and transported in accordance with the Virginia regulations governing Transportation of Hazardous Materials (9 VAC 20-110-10 *et seq.*). For additional information, the Air Force should contact the Department of Labor and Industry at (757) 455-0891.

(b) Lead-based Paint Removal and Disposal. The proposed project should comply with the U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) regulations, and with the Virginia Lead-Based Paint Activities Rules and Regulations (9VAC 20-60-261). For additional information, the Air Force may contact the Department of Professional and Occupational Regulation (Thomas Perry, telephone (804) 367-8595).

5. *Historic Structures and Archaeological Resources.* Pursuant to *Section 106 of the National Historic Preservation Act*, the Air Force must coordinate with the Virginia SHPO to determine if any archaeological resources would be impacted by the project. The person to contact at the Department of Historic Resources is Ethel Eaton (telephone, (804) 367-2323, ext. 112).

6. Above-ground and Under-ground Storage Tanks. For issues related to above-ground and under-ground storage tanks, contact the DEQ-Tidewater Regional Office at (757) 518-2000.

7. Federal Consistency Determination. Pursuant to the Coastal Zone Management Act of 1972, as amended, federal activities with reasonably foreseeable effects on coastal uses and resources must be constructed and operated in a manner that is consistent, to the maximum extent practicable, with Virginia's Coastal Program (VCP). Based on the information provided in the EA and consistency determination that the Air Force would obtain and comply with all applicable permits and approvals listed under the enforceable policies of Virginia's Coastal Program and comments received from agencies administering the enforceable policies, we concur with the finding that this proposal is consistent with the VCP upon receipt of all applicable permits and approvals. However, there are other state approvals, which may apply to this project, that are not included in this response. Therefore, the Air Force must ensure that this project is constructed in accordance with all applicable federal, state, and local laws and regulations. Contact Anne Newsom at (804) 698-4135 for more information.

Thank you for the opportunity to review the Draft Environmental Assessment and consistency determination. Detailed comments of reviewing agencies are attached for your review. If you have any questions, please contact me at (804) 698-4325 or Anne Newsom at (804) 698-4135.

Sincerely,

Ellie L. Irons, Program Manager
Office of Environmental Impact Review

Enclosures

Cc: Michelle Henickeck, DEQ-OWWP&C
Harold Winer, DEQ-TRO
Allen Brockman, DEQ-Waste Division
Kotur Narasimhan, DEQ-Air Division
Synthia Waymack, DCR
Ethel Eaton, DHR
Alice Baird, DCR-DCBLA
Arthur Collins, HRPDC

MEMORANDUM

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF WATER QUALITY
Larry G. Lawson, P.E., Director

TO: Anne B. Newsom
Office of Environmental Impact Review

FROM: Michelle Henicheck MH
For: Ellen Gilinsky, Ph.D., PWS
Office of Wetlands and Water Protection and Compliance

DATE: August 4, 2004

SUBJECT: Environmental Assessment and Consistency Determination
Munitions Storage Area, Langley Air Force Base
04-130F

We have reviewed the information provided concerning the above-referenced project. The purpose of the project is to develop the Munitions Storage Area (MSA), which would include construction of 13 new buildings, renovation of four existing buildings, and demolition of 16 existing buildings. According to the report (Section 4, page 3), the proposed action would not impact wetlands. DEQ recommends coordination with the Department of Game and Inland Fisheries (DGIF) for any potential time of year restrictions that would be proposed for the threatened and endangered species identified in the vicinity. The report concludes, and we concur, that this project will not adversely affect surface water, wetland, or groundwater resources.

Should the size or scope of the project change, additional review may be necessary. We recommend strict adherence to erosion and stormwater management practices, and further encourage the project proponent to monitor construction activities to make certain that erosion and stormwater management practices are adequately preventing sediment and pollutant migration into surface waters, including wetlands. A VPDES stormwater general permit for construction activities will be required should the project disturb one or more acres of land.

Newsom,Anne

From:	Winer,Harold
Sent:	Wednesday, August 04, 2004 12:33 PM
To:	Newsom,Anne
Cc:	Cash-Robertson,William; Workman,Jane; Borton,David; McConathy,James; Johnston,Milton; Parolari,Bert
Subject:	EIR #04-130F, Munitions Storage Area, LAFB

As requested, TRO staff have reviewed the supplied information and have the following comments:

Regarding our VWP program, based on the information provided, it appears that no wetland impacts are proposed. However, we note that Section 3.3.2, Lines 17-26 references a wetland delineation "conducted in late 2000" which is reportedly "under jurisdictional determination review by the Norfolk USACE..." Given that the USACE confirmation of this delineation is a requisite part of any definitive wetland regulatory decision, the applicant should seek final and official confirmation of this delineation prior to work in or near wetlands. Provided that confirmation of this delineation supports the absence of wetland impacts, none of the activity proposed would require further review or authorization under the Virginia Water Protection Permit program and regulations.

Concerning Water Permitting, the document states that a VPDES general permit addressing the runoff of storm water associated with construction activity will be required for the project because it disturbs an area greater than one acre. The TRO Water Permit Section agrees that if the area of disturbance exceeds an acre, a general permit is required.

Regarding Waste issues, hazardous wastes generated at the present site of the paint booth must be handled in accordance with applicable regs. when the paint booth is relocated. Also, DEQ TRO should be notified of all closures and of all new hazardous waste accumulation areas established as a result of this project. In addition, the handling, storage and disposal of hazardous materials and hazardous wastes may be the responsibility of Langley AFB. Ken Parker of Langley AFB should be contacted to discuss this issue. Also, the handling, storage and disposal of Lead-Based Paint generated during this project must be managed in accordance with applicable regs. of the VHWMR and the VSWMR. Finally, solid wastes generated should be recycled to the maximum extent possible.

Concerning Air Compliance, TRO Air Compliance has reviewed this project from the standpoint of compliance with air pollution control laws and regulations, and concurs with the proponent's Finding of No Significant Impact, contingent on implementation of the project as described.

Regarding Tank issues, Underground Storage Tank Compliance: Two closed fuel (heating) oil USTs are present in the proposed demolition and construction area. Because these tanks are (1) previously closed in place and (2) exempt category II USTs, they are not subject to the Virginia UST Regulation parts II, III, IV and VII. However, the facility should be aware of the potential to encounter these tanks in subsurface excavation. Any release of product to the environment from these tanks during construction activities is subject to the reporting requirements of State Water Control Law Article 11.

Aboveground Storage Tank Compliance: The proposed area of demolition and construction contains a number of small (<660 gallon) ASTs used to store fuel (heating) oil. Because these tanks are not subject to the Virginia AST Regulation, (due to their size) they can be disconnected and placed in storage or moved without regulatory requirements for closure / notification / registration.

UST Remediation: There have been 3 petroleum releases in the Munitions Storage area but these cases have been closed. These include PC# 1995-2363 at Building 1053, PC# 1998-2240 at Building 1075, and PC# 1998-2223 at Building 1077. Any petroleum contaminated soils encountered during the implementation of this project should be properly disposed of. Any new petroleum releases should be reported to DEQ.

Concerning Air Permitting, it is recommended that LAFB provide DEQ/TRO all information related to the removal of any emission units at their facility. Units should include but are not limited to boilers, generators, and tanks. This facility is currently permitted under a synthetic minor permit and not a Title V permit as erroneously indicated on page 4-9 of this document.

Thanks for the opportunity to comment.

Harold J. Winer

Deputy Regional Director
DEQ, Tidewater Regional Office
Phone - 757-518-2153 Fax - 757-518-2003
email - hjwiner@deq.virginia.gov

DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF AIR PROGRAM COORDINATION

ENVIRONMENTAL REVIEW COMMENTS APPLICABLE TO AIR QUALITY

TO: Anne B. Newsom DEQ - OEIA PROJECT NUMBER: 04 – 130F

PROJECT TYPE: ☐ STATE EA / EIR / FONSI **X FEDERAL EA** / EIS ☐ SCC

X CONSISTENCY DETERMINATION/CERTIFICATION

PROJECT TITLE: MUNITION STORAGE AREA AT LANGLEY AIR FORCE BASE, VIRGINIA

PROJECT SPONSOR: DEPARTMENT OF DEFENSE / AIR FORCE

PROJECT LOCATION: X OZONE NON ATTAINMENT AREA

REGULATORY REQUIREMENTSMAY BE APPLICABLE TO: X **CONSTRUCTION**
☐ OPERATION

STATE AIR POLLUTION CONTROL BOARD REGULATIONS THAT MAY APPLY:

1. ☐ 9 VAC 5-40-5200 C & 9 VAC 5-40-5220 E – STAGE I
2. ☐ 9 VAC 5-40-5200 C & 9 VAC 5-40-5220 F – STAGE II Vapor Recovery
3. ☐ 9 VAC 5-40-5490 et seq. – Asphalt Paving operations
4. **X 9 VAC 5-40-5600 et seq. – Open Burning**
5. **X 9 VAC 5-50-60 et seq. Fugitive Dust Emissions**
6. ☐ 9 VAC 5-50-130 et seq. - Odorous Emissions; Applicable to_____
7. ☐ 9 VAC 5-50-160 et seq. – Standards of Performance for Toxic Pollutants
8. ☐ 9 VAC 5-50-400 Subpart_____, Standards of Performance for New Stationary Sources, designates standards of performance for the_____
9. ☐ 9 VAC 5-80-10 et seq. of the regulations – Permits for Stationary Sources
10. ☐ 9 VAC 5-80-1700 et seq. Of the regulations – Major or Modified Sources located in PSD areas. This rule may be applicable to the _____
11. ☐ 9 VAC 5-80-2000 et seq. of the regulations – New and modified sources located in non-attainment areas
12. ☐ 9 VAC 5-80-800 et seq. Of the regulations – Operating Permits and exemptions. This rule may be applicable to _____

COMMENTS SPECIFIC TO THE PROJECT:

Being in an ozone non-attainment area, all care must betaken to restrict the emissions of volatile organic compounds (VOC) and oxides of nitrogen (NOx).

K.S. Narasimhan

(Kotur S. Narasimhan)
Office of Air Data Analysis

DATE: August 6, 2004

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

Street address: 629 East Main Street, Richmond, Virginia 23219
Mailing address: P.O. Box 10009, Richmond, Virginia 23240
Fax (804) 698-4500 TDD (804) 698-4021
www.deq.state.va.us

Robert G. Burnley
Director

(804) 698-4000
1-800-592-5482

MEMORANDUM

TO: Anne B. Newsom, Environmental Program Planner

FROM: ARB Allen Brockman, Waste Division Environmental Review Coordinator

DATE: August 3, 2004

COPIES: Sanjay Thirunagari, Waste Division Environmental Review Manager; Paul Herman, file

SUBJECT: Environmental Assessment/Consistency Determination—DOD/Air Force/Munitions Storage Area at Langley Air Force Base, Virginia; DEQ Project Code 04-130F

The Waste Division has completed its review of the Environmental Assessment/Consistency Determination for the Munitions Storage Area at Langley Air Force Base, Virginia. We have the following comments concerning the waste issues associated with this project:

Both hazardous and solid waste issues were addressed to some extent in the report. However, the report did not include a search of waste-related data bases. The Waste Division staff performed a cursory review of its data files and determined that the facility is a Federal Facility (VA2800005033), a Formerly Used Defense Site (VA9799F8457), and that Bethel Manor Housing at the Base is a RCRA small quantity generator of hazardous waste (VAD988222527). The following websites may prove helpful in locating additional information for these identification numbers: http://www.epa.gov/echo/search_by_permit.html or http://www.epa.gov/enviro/html/rcris/rcris_query_java.html . Paul Herman of the Federal Facility staff in the Waste Division was contacted for his review of this assessment and his memo, dated July 30, 2004, is attached.

Any soil that is suspected of contamination or wastes that are generated must be tested and disposed of in accordance with applicable Federal, State, and local laws and regulations. Some of the applicable state laws and regulations are: Virginia Waste Management Act, Code of Virginia Section 10.1-1400 *et seq.*; Virginia Hazardous Waste Management Regulations (VHWMR) (9VAC 20-60); Virginia Solid Waste Management Regulations (VSWMR) (9VAC 20-80); Virginia Regulations for the Transportation of Hazardous Materials (9VAC 20-110). Some of the applicable Federal laws and regulations are: the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Section 6901 *et seq.*, and the applicable regulations contained

in Title 40 of the Code of Federal Regulations; and the U.S. Department of Transportation Rules for Transportation of Hazardous materials, 49 CFR Parts 107.

In addition, the report states that hazardous materials will be located on the site after construction. Therefore, Federal and State regulations that address hazardous materials/hazardous waste must be followed for the hazardous materials to be located on site after construction.

Any structures that may be demolished/renovated/removed should be checked for asbestos-containing materials (ACM) and lead-based paint prior to demolition. If ACM or LBP are found, in addition to the federal waste-related regulations mentioned above, State regulations 9VAC 20-80-640 for ACM and 9VAC 20-60-261 for LBP must be followed.

Please note that DEQ encourages all construction projects and facilities to implement pollution prevention principles, including the reduction, reuse, and recycling of all solid wastes generated. All generation of hazardous wastes should be minimized and handled appropriately.

If you have any questions or need further information, please contact Allen Brockman at (804) 698-4468.

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY - WASTE DIVISION
Federal Facilities Restoration Program
629 E. Main Street P.O. Box 10009 Richmond, Virginia 23240

SUBJECT: Environmental Assessment – Langley Air Force Base Munitions Storage Area

TO: Allen Brockman

FROM: Paul E. Herman, P.E., FFR

DATE: July 30, 2004

COPIES: File

The *Draft Environmental Assessment for Munitions Storage Area (MSA) at Langley Air Force Base* dated July 2004 has been reviewed as requested by Allen Brockman, Waste Division Environmental Review Manager. The document presents the proposed development action and the no-action alternatives.

Langley Air Force Base (LAFB) is on the National Priorities List. The munitions storage area property lies on, or is adjacent to, five CERCLA Environmental Restoration Program (ERP) Sites: LF-11, LF-12, LF-13, LF-18, and SS-24. However, only Sites LF-13 and LF-18 appear to be in the path of the proposed development action's construction plans for the proposed Administrative Support Building and parking lot. And, Site SS-24 lies beneath a building that is to remain in place as part of the proposed action. All other new buildings identified in the proposed development action lie within the current MSA fence line and away from ERP Sites. All buildings slated for demolition in the proposed development action are not atop ERP Sites.

The Sites that may impact the proposed development action, Sites LF-13, LF-18, and SS-24, have remedies in place that are protective of human health and the environment. Site LF-13 is an abandoned landfill approximately 12 acres in size that was assumed (absent any Base documentation) to have received municipal-type refuse for a period of more than 10 years. LF-13 has been regraded and covered with topsoil, has established vegetation and is considered a wetland area. Site LF-18 is an abandoned landfill approximately 16 acres in size that received batteries, fly ash, wood, stumps, and construction debris during the 1930's. LF-18 has been regraded and covered with topsoil to ensure 24" of cover atop the waste left in place. Vegetation has been established atop the new cover, the northern portion of the Site is densely overgrown and wooded and some areas are marshy and considered wetlands. Site SS-24 is a former waste oil storage area where solvents, hydraulic fluid, waste oil, JP-4 fuel, engine oil and other chemicals were disposed in one 6,000 gallon and one 8,000 gallon fiberglass underground storage tank. The tanks were removed in 1996 and a No Further Action Decision Document was signed in November 2000.

The Federal Facilities Restoration Program recommends the facility contact Mr. John Tice, LAFB Environmental Restoration at (757) 764-1086 for information concerning the CERCLA obligations at the ERP Sites identified above. Mr. Tice should be advised prior to initiating any land, sediment, or ground water disturbing activities at ERP Sites to ensure all remedies in place remain intact and long term monitoring wells are not disturbed.

Newsom,Anne

From: Andy Zadnik [ZadnikA@dgif.state.va.us]
Sent: Monday, July 26, 2004 10:16 AM
To: Newsom,Anne
Subject: DEQ 04-130F_Langley AFB Munitions Storage Area

We have reviewed the subject project and offer the following comments.

We do not anticipate a significant adverse impact upon resources under our jurisdiction due to this project.

We find this project to be consistent with those sections of the VA Coastal Resources Management Program under our jurisdiction.

Thank you for the opportunity to comment on this project. Please contact me if I can be of further assistance.

Andrew K. Zadnik
Environmental Services Section Biologist
Department of Game and Inland Fisheries
4010 West Broad Street
Richmond, VA 23230

(804) 367-2733
(804) 367-2427 (fax)

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

Joseph H. Maroon
Director

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION
203 Governor Street
Richmond, Virginia 23219-2010
(804) 786-6124

MEMORANDUM

Date: 5 August 2004

To: Anne B. Newsom, Virginia Department of Environmental Quality

From: John R. Davy, Director, Planning & Recreation Resources

Subject: DEQ#04-130F: Munitions Storage Area at Langely Air Force Base, Hampton

The Department of Conservation and Recreation (DCR) functions to preserve and protect the environment of the Commonwealth of Virginia and advocate the wise use of its scenic, cultural, recreation and natural heritage resources. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, state unique or exemplary natural communities, significant geologic formations and similar features of scientific interest.

DCR has searched its Biotics Data System for occurrences of natural heritage resources from the area outlined on the submitted map. Biotics documents the presence of natural heritage resources in the project area. However, due to the scope of the activity and the distance to the resources, we do not anticipate that this project will adversely impact these natural heritage resources.

The Virginia Department of Agriculture and Consumer Services (VDACS), which has regulatory authority to conserve rare and endangered plant and insect species through the Virginia Endangered Plant and Insect Species Act, has established a Memorandum of Agreement with the Virginia Department of Conservation and Recreation (DCR). Under this Agreement DCR, in consultation with VDACS, represents VDACS in its comments and recommendations regarding the potential impact of reviewed projects or activities on state- listed plant and insect species. The current activity will not affect any state-listed threatened or endangered plants or insects.

Any absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks natural heritage resources. New and updated information is continually added to Biotics, please contact DCR for an update on this natural heritage information if a significant amount of time passes before it is utilized.

Please note that federal agencies and their authorized agents conducting regulated land disturbing activities on private and public lands in the state must comply with the Virginia Erosion and Sediment Control Law and Regulations (VESCL&R), Virginia Stormwater Management Law and Regulations (VSWML&R), and other applicable federal nonpoint source pollution mandates (e..g, Clean Water Act-Section 313, Federal Consistency under the Coastal Zone Management Act). Clearing and grading activities, installation of staging areas, parking lots, roads, buildings, utilities, or other structures, soil/dredge spoil areas, or related land conversion activities that disturb 2,500 square feet or more would be regulated by VESCL&R and those that disturb one acre or greater would be covered by VSWML&R. Accordingly, the sponsoring federal agency should prepare and implement erosion and sediment control (ESC) and stormwater management (SWM) plans to ensure compliance with state law. The Department of Defense/U. S. Air Force is ultimately responsible for achieving project compliance through oversight of on site contractors, regular field inspection, prompt action against non-compliant sites, and/or other mechanisms consistent with agency policy. The Department of Defense is highly encouraged to contact DCR's Chowan, Albemarle & Coastal Watersheds Office and/or the local ESC and SWM authorities to obtain plan development, implementation assistance and to ensure project conformance during and after active construction. *[Reference: VESCL §10.1-567; VSWML §10.1-603.15]*. In addition, DCR's Division of Chesapeake Bay Local Assistance is also reviewing this project. Any comments they may have will be submitted directly to you.

Finally, no state scenic resources, state recreation facilities or state natural area preserves under DCR's jurisdiction will be impacted by this project.

Thank you for the opportunity to offer comments.

If you cannot meet the deadline, please notify ANNE B.NEWSOM at 804/698-4135 prior to the date given. Arrangements will be made to extend the date for your review if possible. An agency will not be considered to have reviewed a document if no comments are received (or contact is made) within the period specified.

REVIEW INSTRUCTIONS:

A. Please review the document carefully. If the proposal has been reviewed earlier (i.e. if the document is a federal Final EIS or a state supplement), please consider whether your earlier comments have been adequately addressed.

B. Prepare your agency's comments in a form which would be acceptable for responding directly to a project proponent agency.

C. Use your agency stationery or the space below for your comments. **IF YOU USE THE SPACE BELOW, THE FORM MUST BE SIGNED AND DATED.**

Please return your comments to:

MS. ANNE B. NEWSOM
DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF ENVIRONMENTAL IMPACT REVIEW
629 EAST MAIN STREET, SIXTH FLOOR
RICHMOND, VA 23219
FAX #804/698-4319

RECEIVED

JUL 28 2004

DEQ-Office of Environmental Impact Review

ANNE B. NEWSOM
ENVIRONMENTAL PROGRAM PLANNER

COMMENTS

Based on information in our database, we do not anticipate this project will have significant adverse affect as it relates to VDACS' responsibilities for the preservation of agricultural lands and the protection of listed endangered and threatened plant and insect species.

(signed) _____ (Keith R. Tignor) (date) July 23, 2004

(title) Endangered Species Coordinator

(agency) VDACS, Office of Plant and Pest Services

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

Joseph H. Maroon
Director

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

101 N. 14th Street, 17th Floor
Richmond, Virginia 23219-3684
PHONE: (804) 225-3440 FAX: (804) 225-3447

August 12, 2004

Ms. Anne B. Newsom
Department of Environmental Quality
Office of Environmental Impact Review
629 East Main Street, Sixth Floor
Richmond, VA 23219

RE: Munitions Storage Area at Langley Air Force Base, VA
DEQ project # 04-130F
DCBLA project # FSPR-USAF-02-04

Dear Ms. Newsom,

We have reviewed the Consistency Determination for the Munitions Storage area at Langley Air Force Base as requested.

The Environmental Assessment does not specifically address Coastal Lands Management. While Chesapeake Bay Preservation Areas are not locally designated on federal lands, this does not relieve the Air Force of its responsibilities to be consistent with the provisions of the Chesapeake Bay Preservation Area Designation and Management Regulations (Regulations), as one of the enforceable programs on Virginia's Coastal Resources Management Program (VCRMP). Federal actions on installations located within Tidewater Virginia are required to be consistent with the performance criteria of the Regulations on lands analogous to locally designated Chesapeake Bay Preservation Areas.

In Hampton, the areas protected by the Chesapeake Bay Act, as locally implemented requiring stringent performance criteria, include: tidal wetlands, non-tidal wetlands connected by surface flow and contiguous to tidal wetlands or tributary streams, tidal shores and a 100-foot vegetated buffer area located adjacent to and landward of the aforementioned features. Less stringent performance criteria apply to land that is contiguous to the 100-foot buffer for a distance of 100 feet in the landward direction.

In addition since the project exceeds 2,500 square feet of land disturbance, an erosion and sediment control plan is required prior to land disturbance in accordance with the *Virginia Erosion and Sediment Control Handbook*, Third Edition, 1992.

The 1998 Federal Agencies' Chesapeake Ecosystem Unified Plan requires the signatories, including the US Air Force, to fully cooperate with local and state governments in carrying out voluntary and mandatory actions to comply with the management of stormwater. The agencies also committed to encouraging construction design that a) minimizes natural area loss on new and rehabilitated federal facilities; b) adopts low impact development and best management technologies for storm water, sediment and erosion control, and reduces impervious surfaces; and c) considers the Conservation Landscaping and Bay-Scapes Guide for Federal Land Managers. In addition, the Chesapeake 2000 Agreement committed the government agencies to a number of sound land use and stormwater quality controls. The signatories additionally committed the agencies to lead by example with respect to controlling nutrient, sediment and chemical contaminant runoff from government properties. In December 2001, the Executive Council of the Chesapeake Bay Program issued Directive No. 01-1, Managing Storm Water on State, Federal and District-owned Lands and Facilities, which includes specific commitments for agencies to lead by example with respect to stormwater control.

We appreciate the opportunity to provide our comments on this project. Please do not hesitate to contact us at 1-800-CHESBAY should you have any questions.

Sincerely,

Alice R. T. Baird, LA
Senior Environmental Planner

Brad Belo
Senior Environmental Planner

If you cannot meet the deadline, please notify ANNE B.NEWSOM at 804/698-4135 prior to the date given. Arrangements will be made to extend the date for your review if possible. An agency will not be considered to have reviewed a document if no comments are received (or contact is made) within the period specified.

REVIEW INSTRUCTIONS:

A. Please review the document carefully. If the proposal has been reviewed earlier (i.e. if the document is a federal Final EIS or a state supplement), please consider whether your earlier comments have been adequately addressed.

B. Prepare your agency's comments in a form which would be acceptable for responding directly to a project proponent agency.

C. Use your agency stationery or the space below for your comments. **IF YOU USE THE SPACE BELOW, THE FORM MUST BE SIGNED AND DATED.**

Please return your comments to:

MS. ANNE B. NEWSOM
DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF ENVIRONMENTAL IMPACT REVIEW
629 EAST MAIN STREET, SIXTH FLOOR
RICHMOND, VA 23219
FAX #804/698-4319

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AUG 09 2004
DEQ-Office of Environmental Impact Review

ANNE B. NEWSOM
ENVIRONMENTAL PROGRAM PLANNER

COMMENTS

No comments

(signed) Alan D. Weber (date) 8-5-04

(title)

(agency) VDH

PROJECT #04-130F 8/98